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CONTENTS

Vol. XXXII

JULY 1923

No. 1

Black Balling the Black Ball.....	13
The Duplicity of Captain Scraggs (Part II).....	14-18
The Carrick Bend.....	19
Portable Power for Small Boats.....	20-21
Memory and Seafarer First to Bermuda.....	22-23
Scaramouche, As Fast As They Come.....	24
Arrow, a Pacific Coast Express Cruiser.....	25
New Boats at Annapolis.....	26
A Sport Runabout.....	27
Modern Methods of Boat Building.....	28-29
The Seventy Horse Power Midget Scripps.....	30
Bear Cats for Comfort and Speed.....	31
Simplified Radio for the Cruiser.....	32-33
News and Music by Radio Men when Cruising.....	34
Movies and Jazz for the Eskimos.....	35
Active Season Opens on the Pacific.....	36
White Cap, a Special Runabout.....	37-38
Small Motor Boats: Their Care, Construction and Equipment.....	39-41
Prize Question No. 1: Repairing a Broken Plank Properly.....	39-40
Prize Question No. 2: Safe Methods of Carrying Extra Fuel.....	41
Motor Boatmen's Chart No. 45—Lake Huron.....	42
World's Finest Yacht Club Opens in Detroit.....	43
Pilgrim, a Clever Speed Cruiser.....	43
Yard and Shop.....	44

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But in enacting the law, nobody gave a thought to the 550,000 motor boats. The picture of a two-foot ball on a ten-foot yacht tender did not present itself to the imaginations of the Inspectors, and the lugubrious appearance of a yacht club anchorage festooned with black balls never occurred to them. The problem of stowing a two-foot object and finding a place for displaying it on a speed runabout did not concern them.

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But Captain Scraggs was beyond reason. "McGuffey's fired! McGuffey's fired!" he reiterated. "The dirty rotten wharf rat! Call yourself an engineer?" he continued, witheringly. "As an engineer you're a howling success at shoemakin', you slob. I'll fix your clock for you, my hearty. I'll have your ticket took away from you, an' that's no Chinaman's dream, nuther."

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Illustrated by L. A. Shafer

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trolley with the wire, wet with fog. McGuffey knew the exact position of the Maggie now, so he poised a moment on her bow; as a wave swept past him, he leaped overboard, scrambled ashore, made his way up the beach to the Great Highway which flanks the shore line between the Cliff House and Ingleside, sought a roadhouse, and warmed his interior with four fingers of whiskey neat. Then, feeling quite content with himself, even in his wet garments, he boarded a city-bound trolley car and departed for the warmth and hospitality of Scab Johnny's sailor boarding house in Oregon Street.

Captain Scraggs continued to hurl other people's vegetables into the murk forward for at least two minutes after Mr. McGuffey had shaken the coal dust of the Maggie from his feet, and was only recalled to more practical affairs by the bored voice of Mr. Gibney.

"The owners o' them artichokes expect to get half a dollar apiece for 'em in New York, Scraggsy. Cuz it out, old timer, or you'll have a claim for a freight shortage chalked up agin you.

"Nothin' matters any more," Scraggs replied in a choked voice, and immediately sat down on the half-emptied crate of artichokes and commenced to weep bitterly—half because of rage and half because he regarded himself a pauper. Already he had a vision of himself scouring the waterfront in search of a job.

"No use boo-hooin' over spilt milk, Scraggsy." Always philosophical, the author of the owner's woe sought to carry the disaster off lightly. "Don't add your salt tears to a saltier sea until you're certain you're a total loss an' no insurance. I got you into this and I suppose it's up to me to get you off, so I guess I'll commence operations." Suiting the action to the word, Mr. Gibney grasped the whistle cord and a strange, sad, sneezing, wheezy moan resembling the expiring protest of a lusty pig and gradually increasing into a long-drawn but respectable whistle rewarded his efforts. For once, he could afford to be prodigal with the steam, and while it lasted there could be no mistaking the fact that here was a steamer in dire distress.

The weird call for help brought Scraggs around to a fuller realization of the enormity of the disaster which had overtaken him. In his agony, he forgot to curse his navigating officer for the latter's stubbornness in refusing to turn back when the fog threatened. He clutched Mr. Gibney by the right arm, thereby interrupting for an instant the dismal outburst from the Maggie's siren.

"Gib," he moaned. "I'm a ruined man. How're we ever to get the old sweetheart off whole? Answer me that, Gib. Answer me, I say. How're we to get my Maggie off the beach?"

Mr. Gibney shook himself loose from that frantic grip and continued his pull on the whistle until the Maggie, taking a false note, quavered, moaned, spat steam a minute, and subsided with what might be termed a nautical sob. "Now see what you've done," he bawled. "You've made me bust the whistle."

"Answer my question, Gib."

"We'll never get her off if you don't quit interferin' an' give me time to think. I'll admit there ain't much of a chance, because it's dead low water now an' just as soon as the tide is at the flood she'll drive further up the beach an' fall apart."

"Perhaps McGuffey will have heart enough to telephone into the city for a tug."

"Tain't scarcely probable, Scraggsy. You abused him vile an' threw a lot of fodder at him."

"I wish I'd been took with paralysis first," Scraggs wailed bitterly. "You'd best jump ashore, Gib, an' 'phone



They pounced upon him.

in. We're just below the Cliff House and you can run up to one o' them beach resorts an' 'phone in to the Red Stack Tug Boat Company."

"I wouldn't be ethics for me, the registered master o' the Maggie, to desert the ship, Scraggsy, old stick-in-the-mud. What's the matter with gettin' your own shanks wet?"

"I dassen't, Gib. I've had a touch of chills an' fever ever since I used to run mate up the San Joaquin sloughs. Here's a nickel to drop in the telephone slot, Gib. There's a good fellow."

"Scraggsy, you're deludin' yourself. Show me a tug-boat skipper that would come out here on a night like this to pick up the S. S. Maggie, two decks an' no bottom an' loaded with garden truck, an' I'll wag my ears an' look at the back o' my neck. She ain't worth it."

"Ain't worth it! Why, man, I paid fifteen hundred hard cash dollars for her."

"Fourteen hundred an' ninety-nine dollars an' ninety-



lifted him to the rail and dropped him overboard

nine cents too much. They seen you comin'. However, grantin' for the sake of argyment that she's worth the tow, the next question them towboat skippers'll ask is: 'Who's goin' to pay the bill?' It'll be two hundred an' fifty dollars at the lowest figger, an' if you got that much credit with the towboat company you're some high financier. Ain't that logic?"

"I'm afraid," Scraggs replied sadly, "it is. Still, they'd have a lien on the Maggie——"

"Steamer ahoy!" came a voice from the beach.

"Man with a megaphone," Mr. Gibney cried. "Ahoy! Ahoy, there!"

"Who are you an' what's the trouble?"

Captain Scraggs took it upon himself to answer: "American steamer Mag——"

Mr. Gibney sprang upon him tigerishly, placed a horny, tobacco-smelling palm across Scraggs's mouth and effectively smothered all further sound. "American steamer

Yankee Prince," he bawled like a veritable Bull of Bashan, "of Boston, Hong Kong to Frisco with a general cargo of sandal wood, rice, an' silk. Where're we at?"

"Just outside the Gate. Half a mile south o' the Cliff House."

"Telephone in for a tug. We're in nice shape, restin' easy, but our rudder's gone an' the after web o' the crank shaft's busted. Telephone in, my man, an' I'll make it up to you when we get to a safe anchorage. Who are you?"

"Lindstrom, of the Golden Gate Life Saving Station."

"I'll not forget you, Lindstrom. My owners are Yankees, but they're sports."

"All right. I'll telephone. On my way!"

"God speed you," murmured Mr. Gibney, and released his hold on Captain Scraggs, who instantly threw his arms around the navigating officer's burly neck. "I forgive you, Adelbert," he crooned. "I forgive you freely. By the tail of the Great Sacred Bull, you're a marvel. She's an all-

night fog or I'm a Chinaman, and if it only stays thick enough—"

"It'll hold," Gibney retorted doggedly. "It's a tule fog. They always hold. Quit huggin' me. Your breath's bad. Them eggs, I guess."

Captain Scraggs, hurled forcibly backward, bumped into the pilot house, but lost none of his enthusiasm. "You're a jewel," he declared. "Oh, man, what a head! Whatever made you think of the Yankee Prince?"

"Because," Mr. Gibney answered calmly, "there ain't no such ship, this land of ours bein' a free republic where princes don't grow. Still, it's a nice name, Scraggs, old tarpot—more particular since I thought it up in a hurry. Eh, what?"

"Halvorsen," cried Captain Scraggs.

The lone deckhand emerged from a hole in the freight forward whither he had retreated to escape the vegetable barrage put over by Captain Scraggs when McGuffey left the ship. "Aye, aye, sir," he boomed.

"All hands below to the galley!" Scraggs shouted. "While we're waitin' for this here towboat I'll brew a scuttle o' grog to celebrate the discovery o' real seafarin' talent. Gib, my dear boy, I'm proud of you. No matter what happens, I'll never have no other navigatin' officer."

"Don't crow till you're out o' the woods," the astute Gibney warned him.

In the office of the Red Stack Tug Boat Company, Captain Dan Hicks, master of the tug Aphrodite; Captain Jack Flaherty, master of the Bodega, and Tiernan, the assistant superintendent on night watch, sat around a hot little box stove engaged in that occupation so dear to the maritime heart, to-wit: spinning yarns. Dan Hicks had the floor, and was relating a tale that had to do with his life as a freight and passenger skipper.

"We was makin' up to the dock when I see the general agent standin' in the door o' the dock office—an' all of a sudden I didn't feel so chipper about havin' crossed Humboldt bar in a sou'easter. I saw the old man runnin' his eye along forty foot o' twisted pipe railin', a wrecked bridge, three bent stanchions an' every door an' window on the starboard side o' the ship stove in, while the passengers crowded the rail lookin' cold an' miserable, pea-green an' thankful. No need for me to do any explainin'. He knew. He throws his dead fish eye up to me on what's left o' the bridge an' I felt my job was vacant."

"We was hit by a sea or two on Humboldt bar, sir," I says, as if gettin' hit by a sea or two an' havin' the ship gutted was an every-day experience."

"Is that so, Hicks?" says he sweetly. "Well, now, if you

hadn't told me that I'd ha' jumped to the conclusion that a couple o' the mess boys had got fightin' an' wrecked the ship before you could separate 'em. Why in this an' that," he says, "didn't you stick inside when any dumb fool could see the bar was breakin'?"

"I wanted to keep the comp'ny's sailin' schedule unbroken, sir," I says, tryin' to be funny.

"Well, Captain," he says, "it 'pears to me you've broken damned near everything else tryin' to do it."

"I was certain he was goin' to set me down, but the

worst I got was a three months' lay-off to teach me common sense—"

The telephone rang and Tiernan answered. Hicks and Flaherty hitched forward in their chairs to listen.

"Hello. . . . Yes, Red Stack office. . . . Steamer Yankee Prince. . . . What's that? . . . silk and rice? . . . Half a mile below the Cliff House, eh? . . . Sure, I'll send a tug right away, Lindstrom."

Tiernan hung up and faced the two skippers. "Gentlemen," he announced, "here's a chance for a little salvage money to-night. The American steamer Yankee Prince is ashore half a mile below the Cliff House. She's a big tramp with a valuable cargo from Hong Kong, with her rudder gone and her crank shaft busted."

"It's high water at twelve thirty-seven," Jack Flaherty pleaded. "You'd better send me, Tiernan. The Bodega has more power than the Aphrodite."

This was the truth and Dan Hicks knew it, but he was not to be beaten out of his share of the salvage by such flimsy argument. "Jack," he pleaded, "don't be a hog all the time. The Yankee Prince is an eight thousand ton vessel and it's a two-tug job. Better send us both Tiernan, and play safe. Chances are our competitors have three tugs on the way right now."

"What a wonderful imagination you have, Dan. Eight thousand tons! You're crazy, man. She's thirteen hundred net register and I know it because I was in Newport News when they launched her, and I went out with her skipper on the trial trip. She's a long, narrow-gutted craft, with engines aft, like a lake steamer."

"We'll play safe," Tiernan decided. "Go to it—both of you, and may the best man win. She'll belong to you, Jack, if she's thirteen hundred net and you get your line aboard first. If she's as big as Dan says she is, you'll be equal partners—"

But he was talking to himself. Down the docks Hicks and Flaherty were racing for the respective commands, each shouting to his night watchman to pipe all hands on

(Continued on page 96)

Chap Says—

A Liking for Sea Stories Comes Second Only to Love of the Sea Itself

IF YOU can't be on the water as much as you want, the next best thing is to read about those who are on it. And there's no gainsaying that for any given interval of time more amazing and more amusing things happen to fiction characters than to any other classification of humans.

I mention these simple truths because readers inform me that our new policy of adding tales of the sea to the regular contents of *MoToR BOATING* is going over like a breeze. The first half of Peter B. Kyne's Captain Scraggs story in the June issue was a promise of good things to come.

But this is only a beginning. In every issue of *MoToR BOATING* you will find a bang-up, smashing tale of the sea—tales of humor, of character, that will take you back to the first time you smelled salt water, to the day when you just missed beaching your boat on an inlet bar looking for a hole in the wall of breakers—other stories that will transport you to unimagined situations and float you high on the tide of romance.

The strength of the wind will breathe through these stories, the tang of sea life will permeate them, and the vigor of the salt spray will distinguish them. But here! I see signs in myself of growing poetic. What I should like to impress upon every old and new reader of *MoToR BOATING* is that nothing will be subtracted from the magazine to make room for the fiction feature. You will still have the cruise and the racing stories, the photographs, the technical articles and descriptions, the building plans, the navigation series, the prize contests, and much more.

And you'll have, too, in *MoToR BOATING*, the best sea story in print for the particular month. Therefore, you and everyone else who loves stories of the sea—everyone does—will know where to find the best.



This knot is useful since the rope is not liable to break at the nip. Begin by taking one end of each line in each hand and cross the right hand line over the left hand
one

The Carrick Bend

A Valuable Knot Where Large Lines Are To Be Joined—Will Stand a Heavy Strain As It Cannot Jam



Hold the point of crossing with the left hand and make a bight with this line so that the right hand one comes through it as shown



Draw both ends tight and lightly stop the loose ends to their respective parts. Note the difference between this bend and the Bowline hitch

Take the right hand end and bring it over the cross in the bight and underneath the standing part. Return it again through the bight from underneath in the opposite direction to the way in which it went through before





Portable Power for Small Boats

*The Help of a Small
Light Weight Engine
Adds to the Pleasure
and Sport of Boating*

Many a pleasant afternoon can be spent in racing small boats on equal terms when they are equipped with portable motors. The thrill and excitement of racing on an equal footing is just as great as competition among larger boats

A valuable feature of this little motor is the tilting arrangement. This permits of safe navigation in shallow waters as the motor will instantly tilt when the propeller skeg strikes an obstruction. The boat can be beached without harm

The light weight of these machines permits them to be carried as easily as a pair of oars and without danger of soiling the clothing. Thirty-five pounds is not very much when it is capable of delivering two full horse-power

Probably the least expensive method of transportation known today. Here we have an 18-foot sport canoe, loaded with five people and being driven at a rapid rate by a little portable motor, which gives all the thrills of motor boating. Its silent operation permits of normal conversation without interruption or annoyance by the engine exhaust. One of these little motors can be readily taken along on week end and vacation trips to river or lakes, and in fact is capable of instantly converting any kind of a boat into a fast motor craft



A recent performance which astounded many observers was the trip made by Reginald K. Ratliff. He succeeded in paddling a canoe from New York to Albany along the entire length of the Hudson River in less time than had been required previously and established a new record for the trip. During the entire journey he was accompanied by an escort party in a heavy 16-foot skiff with a load of at least 1,000 pounds. The propulsive power for this skiff was one of these little outboard motors which propelled its heavy load equally as well as the athlete in his canoe



Photographs by
H. Rosenfeld and E. Levick



Sea-farer which finished second in the ocean race from New London, Conn., to Bermuda, being only beaten by the racing yawl, *Memory*. *Sea-farer* is owned by Samuel B. Coffin of Hudson, N. Y., a member of the cruising Club of America. At the right: *Sea-farer's* crew, S. B. Coffin, owner, Alfred F. Loomis of MoToR Boating, J. Linton Rigg, Donald Steele, Stanley Deane, Free-land Nickerson

Note: Mr. Loomis' story of the *Sea-farer's* voyage and the race to Bermuda will appear in the August issue of MoToR Boating



Most of the yachts carried radio receiving sets

Memory and Seafarer

New York Yacht Club Forty-Footer
Two Mile Ocean Race for Cruising Boats
The Largest and Best Fleet Ever Assem-

A GAIN it has been demonstrated that the small boat can safely and comfortably negotiate a sea voyage and that the length of such a voyage is of little importance. This time, the demonstration took place in a race from New London, Connecticut, to Bermuda, a distance of 662 nautical miles.

The yawl *Memory*, owned by Robert N. Bavier, was the first to finish, arriving at St. Georges, Bermuda, approximately four days, seventeen hours after the

A Great Race to Bermuda

MEMORY, owned by Robert N. Bavier, finished first in the race for cruising sailing craft from New London, Conn., to St. Georges, Bermuda, a distance of 662 nautical miles. *Memory's* time was approximately four days, seventeen hours. *Sea-farer*, with Alfred F. Loomis, of MoToR Boating, on board and acting as navigator, finished second. *Malabar IV*, owned by John G. Alden of Boston, Mass., finished first in the class for boats 35 to 52 feet in length. Twenty-two craft started in the ocean and with very few exceptions were all of a very wholesome and seaworthy type.

First to Bermuda

*Finishes First in Six Hundred Sixty-Two Sailing Craft Start—
led for a Long Distance Racing Event*

start. The schooner Seafarer, owned by S. B. Coffin, was second to cross the finish line, and Malabar IV, owned by John G. Alden, was third. All reported fair weather and good wind most of the way with but occasional calms.

Twenty-two sailing yachts, many of them auxiliaries, but with their power plants sealed, got away from the starting

(Continued on page 60)



Black Hawk, the entry of William H. Hand, Jr., of New Bedford, Mass. While this boat is powered with a Sterling motor, yet under the rules of the race, this was obliged to be sealed and only sail power used. At the left will be seen the crew of Black Hawk with Mr. Hand at the wheel



Dainty, the entry which came from Bermuda to take part in the race to that island. While this was one of the smallest boats to start, yet she made an excellent trip both coming and going. At the left will be seen the crew of Dainty, consisting of six men

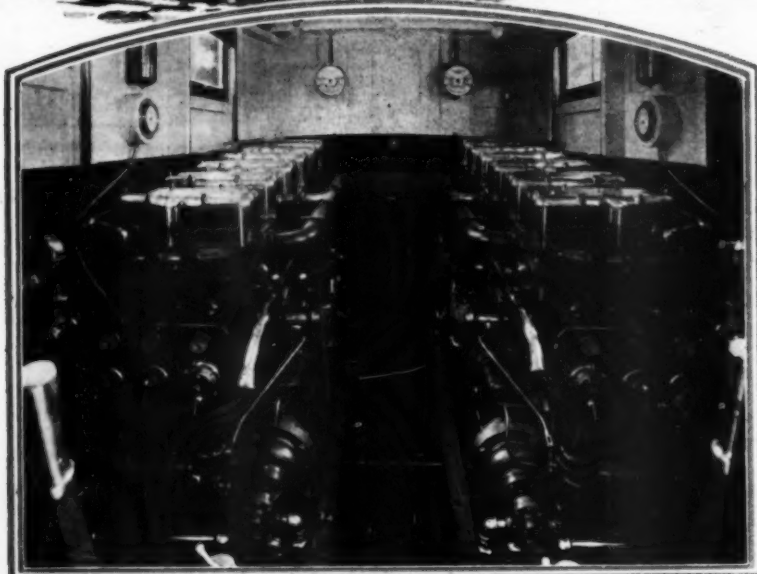
Scaramouche, As Fast As They Come

*Ready for a Brush
for the Supremacy of
Long Island Sound*

ONE of the newest fast cruising boats designed and built by the Consolidated Shipbuilding Corporation of Morris Heights, New York, is Scaramouche, just finished for H. N. Slater of New York. This boat is quite similar to other fast boats, such as Whirlwind, and Pauline M, also recently finished at the same plant. Scaramouche has many admirable features.



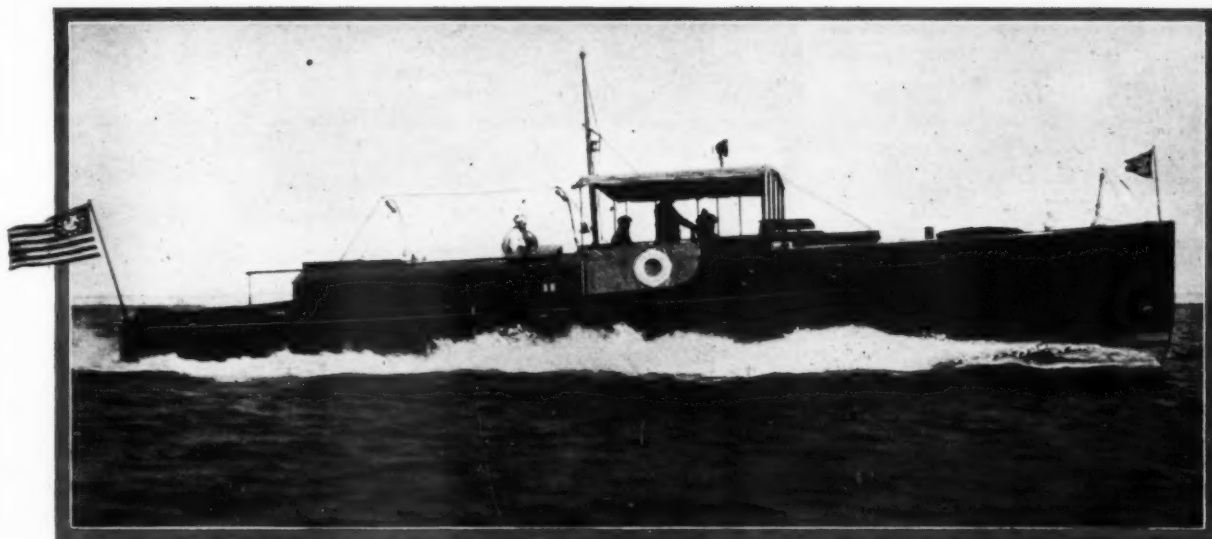
Photographs by M. Rosenfeld



There is an observation cockpit arranged forward of the trunk cabin, which is one of the latest refinements in Consolidated boats of this type. It is here when the boat is running at full speed, that one can find complete rest, with no sound save the rush of air and the swishing water, which adds to, rather than detracts from the enjoyment of boating.

From the observation cockpit one steps down into a cozy room with luxurious berths on either side. Between the owner's cabin and the cockpit, the galley has been installed. While occupying a small space it is nevertheless complete with all modern equipments necessary for a full course dinner. All interior woodwork is mahogany, masterfully finished.

The motive power in Scaramouche is a twin installation of 300 h.p. model R Speedway engines. With these the boat is capable of going out at any time and clicking off 30 miles without effort, and as the Captain says "There is still a little reserve power in case of emergency."



Arrow is a 54-foot Great Lakes Cruiser and was shipped overland from Milwaukee to San Pedro

Arrow, A Pacific Coast Express Cruiser

Interest in Yachting On the West Coast Will Be Stimulated by the Arrival of Great Lakes Craft

INTEREST in yachting on the Pacific Coast is well evidenced by the fact that one of the first of the new crop of 1923 cruisers has just been shipped to San Diego, California, by the Great Lakes Boat Building Corporation, Milwaukee, for George Sturges. It is gratifying that such a splendid boat is going to be put into commission by Mr. Sturges at this time, for the reason that the design, construction, finish, equipment and performance of this new 54-footer will inevitably stimulate still further interest among the Pacific Coast yachtsmen and will clearly demonstrate what can be accomplished with a modern boat.

Arrow, as she has been named, has a length of 54 feet and beam of 11 feet. The hull is of mahogany, natural finish, and the interiors are also in mahogany throughout, and the boat is equipped with the finest fittings the market affords. The power plants are a pair of six cylinder GR Sterlings which give her a speed of over 25 miles an hour. All the controls are carried to the helmsman's position on the bridge deck for one-man operation. The mechanical layout is most comprehensive and includes independent electric light plant, hot and cold water pressure system, forced feed oil lubrication to the bearings, electric wiring in conduit, and positively safe fuel system with a reserve supply of gasoline carried in

seamless steel tanks which have no gravity openings whatever, but from which the gasoline is pumped out of the top.

Every possible convenience is afforded, as shown by the shower bath, box spring berths upholstered in broadcloth, screens, electric lights and electric fans. Moreover, there is a perfect sense of proportion in the distribution of space as between the cabins and decks.

The arrangement plan provides for crew's quarters forward with independent lavatory, followed by completely equipped galley that is self-sustaining for extended cruising, main cabin arranged with uppers and lowers by night, bridge deck, engine compartment with full head room therein, owner's stateroom with adjoining shower bath and lavatory, and a large bridge deck.

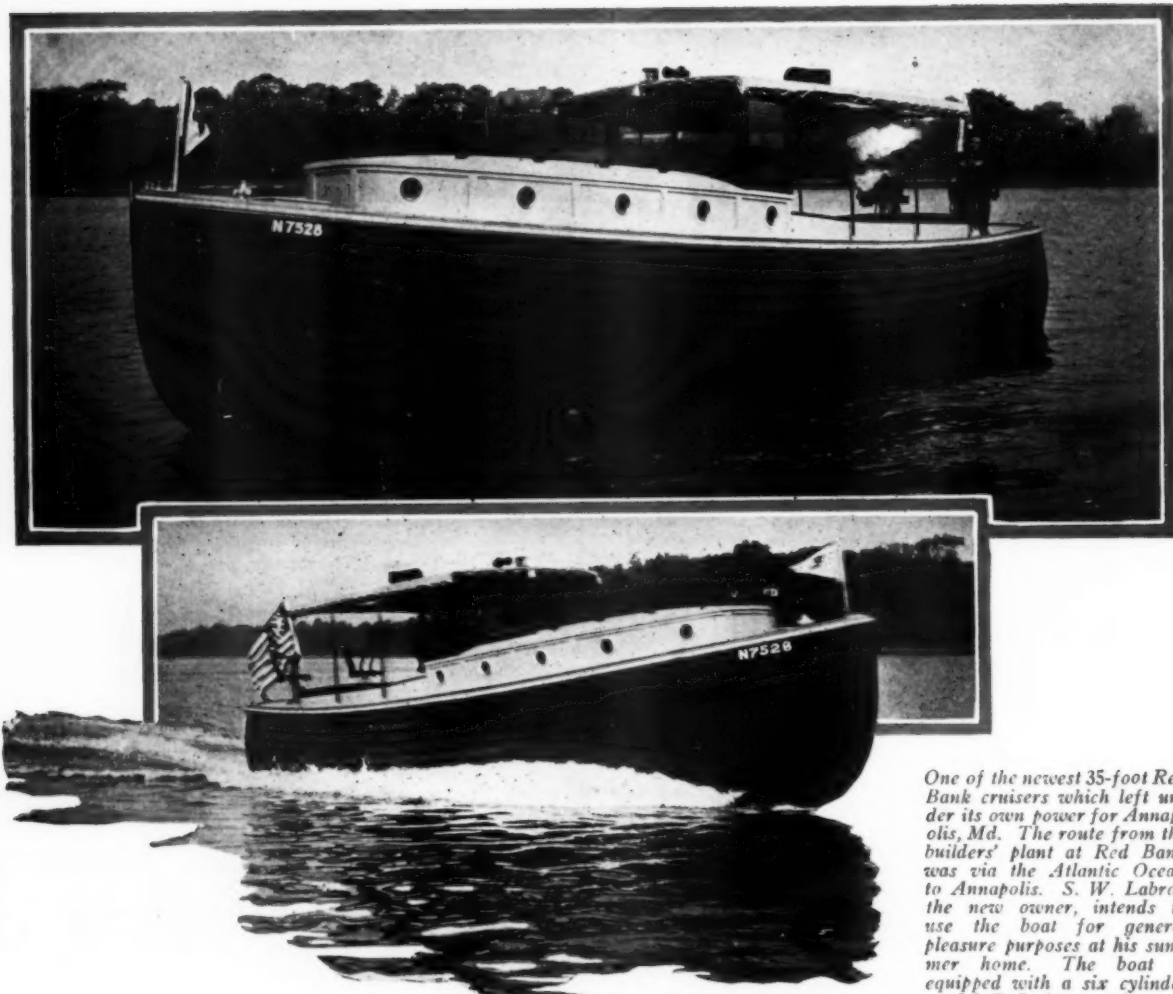
Sleeping accommodations are afforded for a party of six and a crew of two.

Arrow was shipped by rail from Milwaukee to San Pedro, and in this connection it is interesting to note she is the largest boat that can be handled by freight transportation. No difficulty whatever was experienced in making the shipment, which went through in exactly two weeks from Milwaukee.

The appearance and comfortable accommodations of this boat will attract attention along the coast, and do much to stimulate yachting in the West.



Her two Sterling engines drive her at better than 25 m.p.h.



One of the newest 35-foot Red Bank cruisers which left under its own power for Annapolis, Md. The route from the builders' plant at Red Bank was via the Atlantic Ocean to Annapolis. S. W. Labrot, the new owner, intends to use the boat for general pleasure purposes at his summer home. The boat is equipped with a six cylinder model E Scripps engine and is very fast

New Boats at Annapolis

Red Bank Cruiser and Runabout Deliver Themselves Via the Atlantic Ocean Route at the Port of Their New Owners

At the same time this little 26-foot standardized skiff equipped with a Palmer model VH engine accompanied the larger boat on the run to Annapolis to the home of its new owner, J. J. Nelligan. These are only a few of the many boats which have been turned out at Red Bank in a very busy spring season





A Sport Runabout

New Model Fast Boat Turned Out By the Detroit Plant of the Horace E. Dodge Boat Works



The latest model runabout turned out by the Horace E. Dodge Boat Works of Detroit, is a 22-foot standardized hull intended for high speed service, and as a gentleman's sport model

The construction of the boat follows the highest class of marine joiner work. Mahogany is used extensively throughout the hull and the trimmings and upholstery are of Spanish leather in a color to harmonize with the balance of the appointments

The boat is particularly adapted for propulsion by many of the new present day marine engines, which have been perfected in recent years. Such engines as the Scripps, Kermath, White Cap, Hall Scott, and many others are all suitable, and any of these will be supplied



Modern Methods of Boat Building

*Continuing the Series of
Illustrated Descriptions
of Boat Building Operations
Carries Us Through
the Framing of the Hull*

*Photographs by M. Rosenfeld, with the co-
operation of the Elco Works, Bayonne, N. J.*

After the frames have been steamed, they are bent over a suitable mold and before they have cooled they are carried to the skeleton of the hull and fastened to the keel and temporary ribbands with ordinary nails. Care is taken that the alignment of the frame is correct. A slight bevel is cut on the frame to make it fit the keel better.

The method of bending a reverse curve in a frame for the forward sections. Molds are fastened to floor of the shop and a block and tackle brought into play in order to pull the steamed frame into its correct curved position.



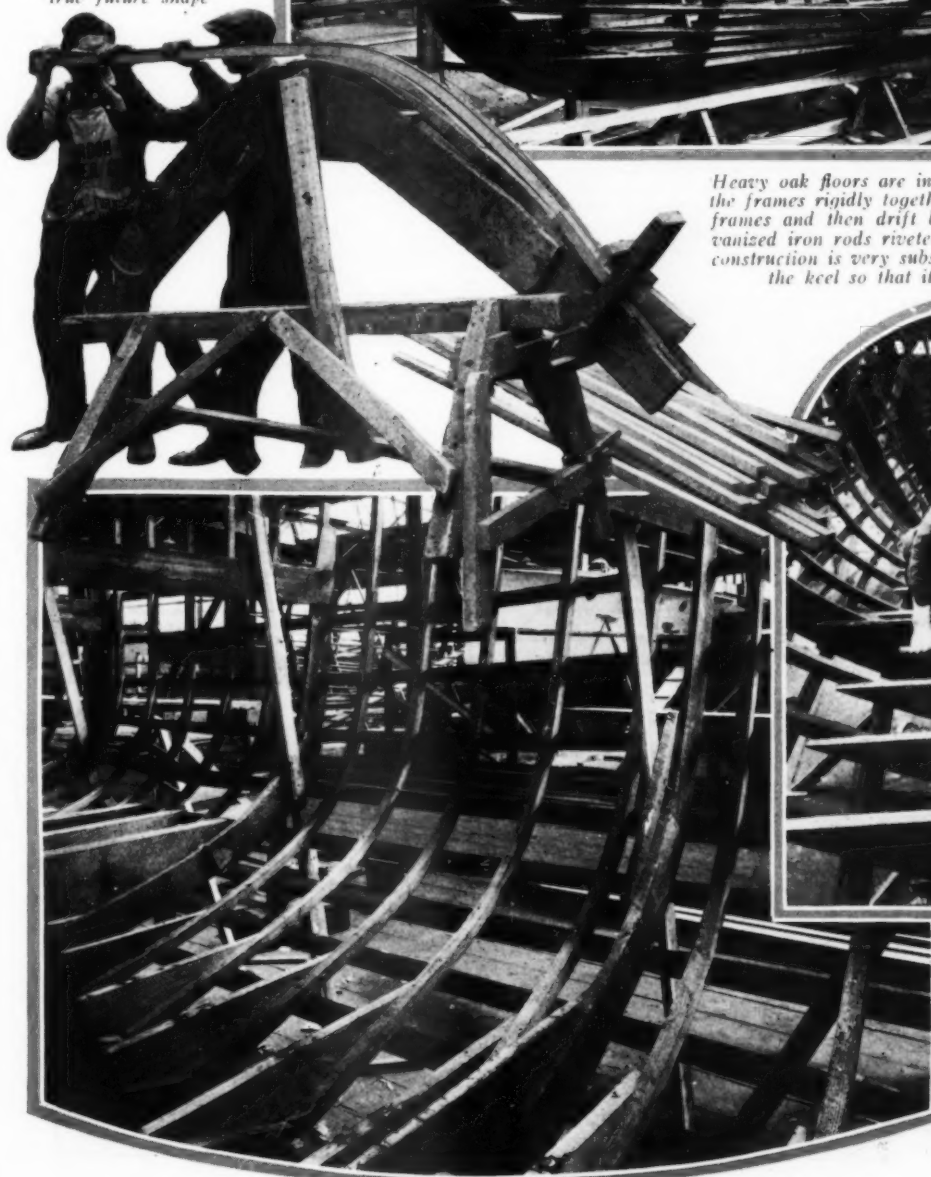
The keel assembly of a V-bottom cruiser erected on the shop floor with the stem and transom attached and aligned into correct position and ready for the erection of molds.

The temporary molds and ribbands form a skeleton which follows the curves of the finished hull. After these are all in place and securely stayed the frame is ready to receive the bent frames, the method of installing these is illustrated on the previous page.

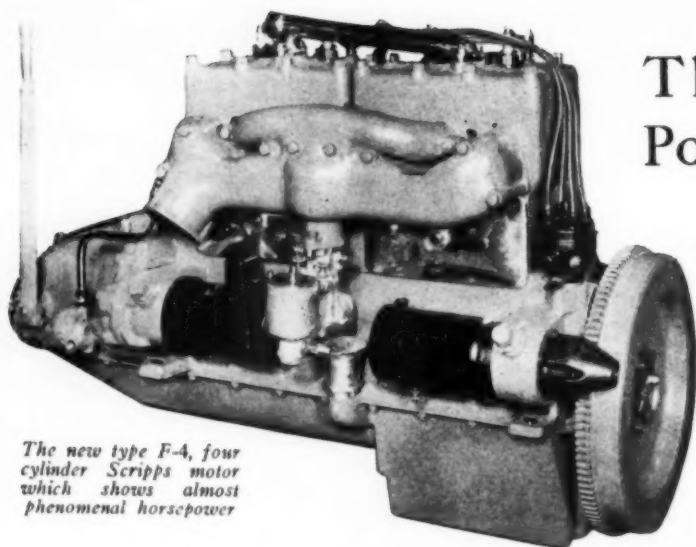
One of the substantial molds over which the frames are bent as they are taken out of the steam box. They are secured temporarily and when partially cool are quickly transferred to the hull and fastened to the ribbands, where they take and keep their true future shape.



Heavy oak floors are installed to tie the bottoms of the frames rigidly together. These are nailed to the frames and then drift bolted to the keel with galvanized iron rods riveted over heavy washers. This construction is very substantial and ties the frame to the keel so that it will never come loose.



A hull interior showing the frames and floors, and in the background the heavier floors which support the engine foundations. The temporary ribbands which appear are removed one by one at a later time when the planking is put on.



The new type F-4, four cylinder Scripps motor which shows almost phenomenal horsepower

The Seventy Horse Power Midget Scripps

A Motor Weighing Only 550 Pounds Which Develops A Horsepower For Every Three Inches of Piston Displacement

PERHAPS the most remarkable development in the automotive field of recent years is the reduction in piston displacement of the motors to obtain a given amount of power. The size of cylinders, that is, the bore and stroke, has been reduced year by year, so that in some instances, it is now possible to get one horsepower for every three or four cubic inches of piston displacement. A few years ago it was necessary to have from ten to twenty cubic inches for every horsepower. No better example of what has been accomplished along these lines can be found than that which resulted at the annual automobile races held at Indianapolis, Indiana. In these events the rules have provided for a reduction in the piston displacement of the engines every few years, but in spite of this, the power developed and the speed of the cars has increased.

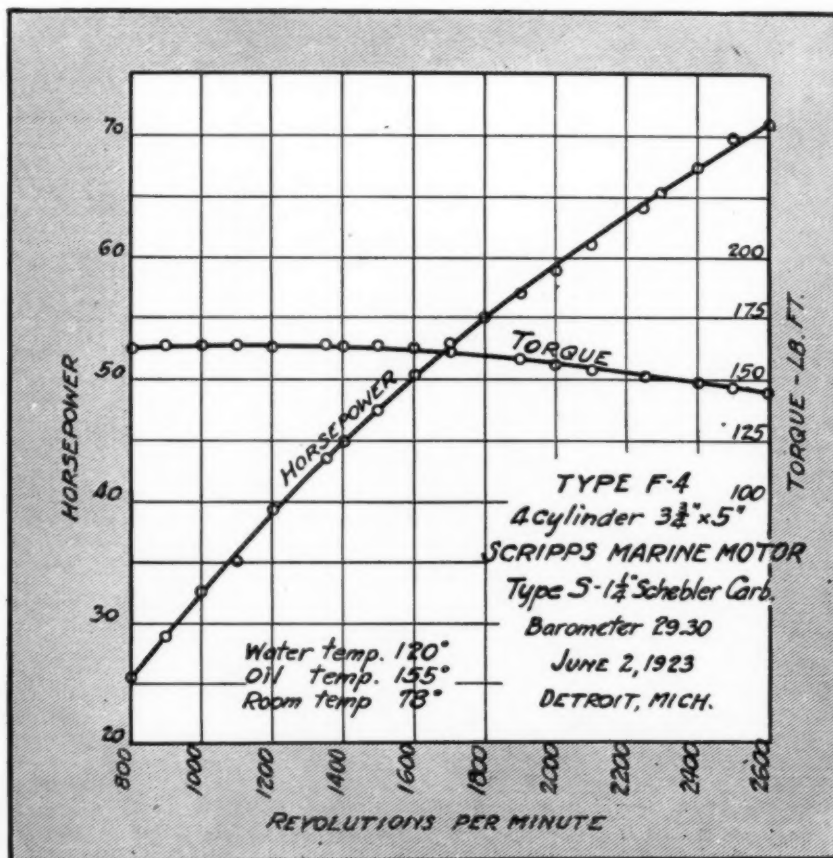
In the 500-mile race in 1911 with a piston displacement of 600 cubic inches, an average speed of 74.59 miles an hour resulted. In the 1913 race, the displacement was reduced to 450 cubic inches, but the speed went up to 76.92 miles per hour. In 1915, the race was limited to power plants of 300 cubic inches or less and the winning car with 274 cubic inches averaged 89.84 miles per hour for 500 miles. Another reduction was made in 1920, when an engine with only 182.5 cubic inches drove a car 500 miles at an average speed of 88.5 miles per hour. One hundred and twenty cubic inches was the limit this year, but this developed power enough to drive the winning car 500 miles at 90.25 miles per hour.

The remarkable progress which is being made in similar development in the marine field is exemplified in the four cylinder, four cycle Type F-4 motor recently announced by the Scripps Motor Company

of Detroit, Michigan. This model has been under development for a considerable period of time, but it was not until this year's motor boat show that it was first shown.

In a motor totaling 220 cubic inches of piston displacement and weighing only 550 pounds, but with every part sufficiently heavy and strong to withstand well over 100% overload, we have never seen one which developed so much power as this Type F-4 Scripps. Even at 2,600 revolutions

(Continued on page 90)



Power and torque curves of the F-4 Scripps marine engine as developed on a recent test

Bear Cats *for* Comfort *and* Speed

BY water, it is approximately 110 miles from the New York end of Long Island to the Race at New London where the waters of the ocean and the Sound first mix. By automobile road, paralleling the Sound, it is about the same distance to New London. On any Sunday, thousands and thousands of motor cars jam this roadway transferring the usual week day Fifth Avenue congestion to the country highway for most of the daylight hours.

On the particular Sunday in question—June 10, 1923, there was no exception to the rule except perhaps due to the fact that the day was one of the first real days in June, the land arteries might have been a little more crowded than ordinarily, if such a thing were possible.

Motorists bound for New London, where the start of the race to Bermuda was to take place two days hence, had been underway since early morning and were still being shunted hither and thither by the traffic officers in the numerous small towns through which it is necessary to pass. These yachtsmen, land bound, were hot and fretful, dusty and disgusted, yet many miles from their harbor. It was just about this time or exactly four o'clock in the afternoon to be more precise, that Commodore Wilbur H. Young with the Editor of *MoToR BOATING* boarded the Commodore's Bear Cat and cast off from the landing of the Plandome Field and Marine Club in Manhasset Bay. New London, 110 miles away was our objective and New London to be reached before the motorists who had been underway all day, was our ambition.

The wind was from the northwest, fairly fresh, so fresh in fact, that as we headed into it when leaving Manhasset

(Continued on page 80)

*A Quick Passage
Up and Down
the Sound In a
Twenty-Six
Foot Runabout*



The Bear Cat at the start of the ocean race to Bermuda. The schooner is Isobel Q, owned by Francis Minot of Falmouth, Mass. The Bear Cat made the run from New York to New London in three hours and thirty-five minutes and the return trip in three hours and twenty-five minutes, again demonstrating that this type of boat is the last word in fast runabouts. Her power is a four cylinder Hall-Scott marine engine

Simplified *Radio* for the Cruiser

An Inexpensive Program Will Produce Results for the Mechanically Inclined Yachtsman

By Paul Godley

THE yachtsman may humor his interest in radio by following through a rather inexpensive program. If available money is augmented by some inclination toward things mechanical, the program may prove effective to a very pleasing degree. Tens of thousands of folks who now enjoy radio programs out of doors, made their start by following a program similar to the one about to be outlined, and it is safe to say that 99 per cent. of those still get great pleasure from radio.

Manufacturers of radio receiving equipment build and sell the few standard parts which are essential to the construction of a first class radio receiver. Thus the matter of receiver construction gets down to a problem of assembly. This simplifies the problem to a very large degree, notwithstanding which, the inclination toward things mechanical mentioned above is quite essential to complete success. The man who does not love to work with tools and to apply the developments of science, at least in some small way, is not advised to attempt construction of a radio receiver.

In a previous article in this magazine, conclusions were reached showing that without doubt the regenerative type of receiver is the most effective available at this time. Many other types of receivers which hold some promise of becoming equally effective are in process of development. In fact, certain manufacturers already have these on the market. But they are no more effective than the regenerative

receiver and are by all odds much more difficult to construct. The inherent characteristics of the regenerative receiver are such that even rather poorly designed equipment, will, in the hands of a practised manipulator, function in the circuit very nearly as well as when the whole has been very carefully designed and assembled. This is by no means true of the newer types of equipment coming into the market, and it will be borne in mind that the newer types are no more effective.

A circuit diagram of what is known as the single circuit regenerative receiver is shown in Figure 1. There is required for its construction and operation the material listed. Most, if not all, of the material used in the single circuit receiver may, at a later date, be utilized with full effect in the more advanced type of regenerative receiver, which is known as the three-circuit regenerative receiver. As pointed out in a previous article, the latter type is more effective as regards sensitivity and selectivity.

The circuit of Figure 1 requires approximately 150 feet of No. 14 hard drawn copper wire for the antenna; approximately 12 feet of No. 18 single conductor lamp cord for making connection to the antenna and to the ground; one standard vario-coupler; one variable condenser, having a capacity of approximately .005 mf. for tuning the antenna circuit;

One form of antenna equipment suitable for the cruiser. The more modern instruments do not require such elaborate aerials

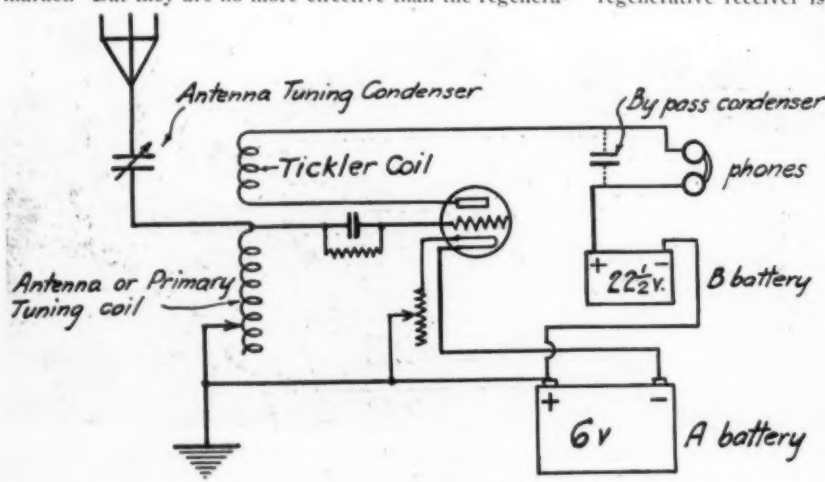
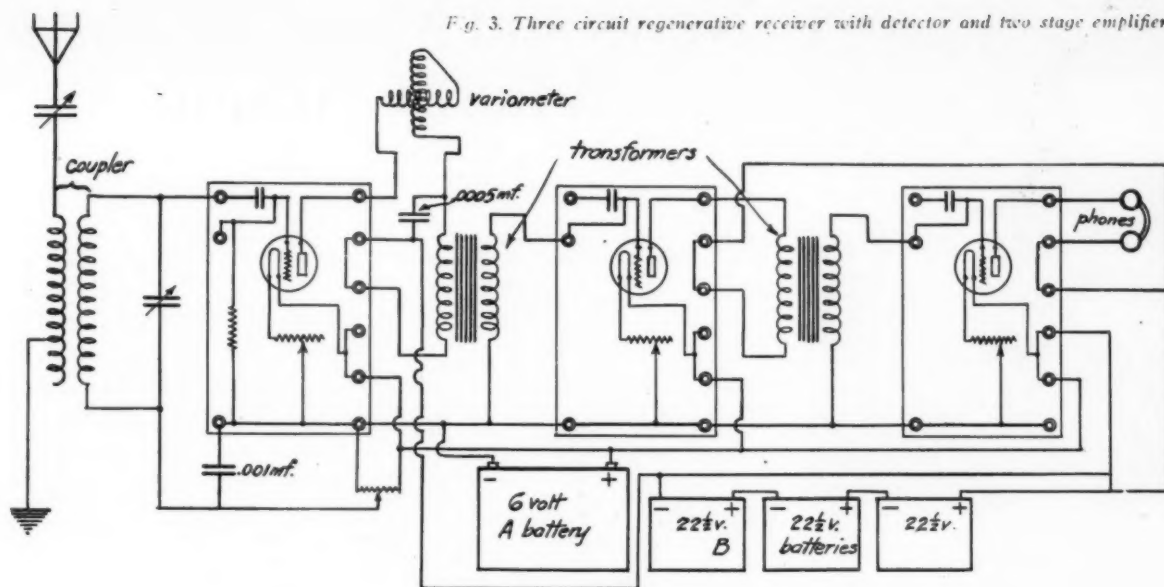


Fig. 1. Single circuit regenerative receiver



one fixed condenser having a capacity of .00025 mf. for connection across the telephones; one three-element vacuum tube of the dry battery type; two standard dry batteries; one standard 22½-volt B battery; one pair of telephone receivers; one 35 ohm rheostat for control of the vacuum tube filament temperature. In assembling this equipment there is only one thing to be guarded against. If the connections to the tickler coil are reversed when the material is assembled, it will be impossible to obtain the very marked amplifications due to the regenerative action. The three-element vacuum tube is a very sensitive type of detector but its sensitivity may be increased approximately one hundred fold due to the application of the regenerative connection. This point, therefore, should by no means be overlooked.

After the simple connections as shown have been made and the filament of the vacuum tube lighted by turning the rheostat from its off position and advancing it, one is ready to listen for signals. The temperature of the filament in case of dry battery tubes should be such that it is burning at a dull red heat. Do not attempt to increase the brilliancy of the filament until it is at full incandescence. This is quite likely to endanger it.

The circuits are most sensitive when they are just about to break into the full regenerative condition. When in this condition the little receiver is acting as a dynamo which generates the high frequency alternating currents utilized at a radio broadcasting station for transmission. Potentially, the receiver is a transmitter but it is not desirable to use it in this condition and it never should be used in this condition. Its radiations may, and quite commonly do, interfere with the reception of neighbors. To secure what we have termed as the full regenerative action, the tickler coil is turned from a zero setting (axis at right angle to antenna coil axis) toward the maximum. After advancing it, it is well to touch the finger to the grid terminal on the vacuum tube socket. If a click is heard both when the finger touches

the terminal and when the finger leaves the terminal, the circuit is in an oscillating condition. If a click is heard only when the finger touches the terminal, the circuit is not in an oscillatory condition.

If one chances to be situated anywhere within a range of six or eight hundred miles of a broadcasting station, one should be able at night time while the circuits are in their full regenerative condition (oscillating) to pick up the whistling tone which signifies that a broadcasting station is in operation. A little simultaneous manipulation of the variometer control and the tickler setting will enable one to stop the whistling noise and to bring out of it voice or music. This circuit is so simple that even a child should be able in a few minutes to get the knack of the manipulation. And it is for this reason that we have gone into no great detail regarding the matter.

The circuit of Figure 2 is quite similar insofar as its functions are concerned to that of Figure 1. It will be noted that a variometer is now placed in the output or plate circuit of the vacuum tube where it functions as a tickler. Through different connection of the coupler the antenna is tuned to a desired signal independent of the tuning in the vacuum tube circuit by the utilization of the taps on the primary of the vario-coupler, and a variable tuning condenser. The input or grid circuit of the vacuum tube is comprised by a fixed inductance and a second variable condenser. The latter serves to tune the input circuit.

(Continued on page 88)

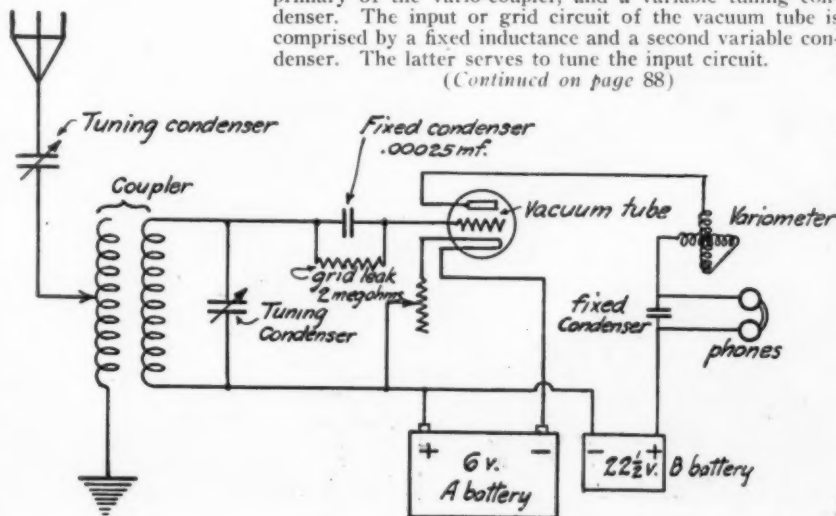
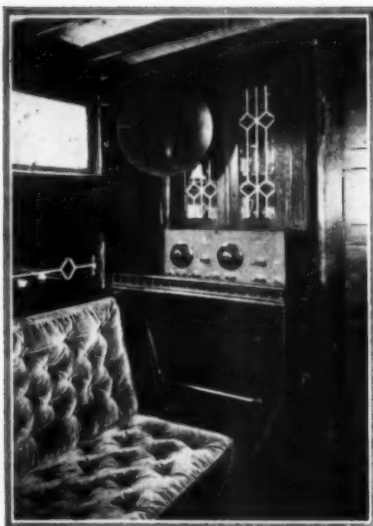


Fig. 2. Three circuit regenerative receiver



At Anchor After the Day's Journey, All the News of the World is Available for the Radio Equipped Cruiser

News and Music *By Radio* When Cruising

By Ralph A. Sayres

MOTOR boat owners have an unequalled reputation for wanting nothing but the best aboard. But the absence of masts has deprived many a motor boat owner of the joys of radio. It fell upon A. H. Grebe & Co., Inc., the pioneer manufacturers of modern radio, to perfect a broadcast receiver for the man who is unable or unwilling to erect the conventional overhead antenna wires. A wire, twenty feet long, which may be conveniently run along the bulkhead, when used with this receiver brings you all of the pleasures of radio.

Now you may ride at anchor beneath the evening sky and tune in all forms of interesting entertainment for your family and guests—bedtime stories for the kiddies, the snappy syncopations of a famous jazz band, and every Sunday evening a wonderful program broadcast direct from the largest motion picture house in the world by its famous eighty-piece orchestra.

As this receiver has only two extremely simple tuning adjustments, one of which is graduated in wave lengths, the ladies aboard, at the twist of a dial, may summon the harmony of a stringed quartet or a program of your favorite songs sung, far over the horizon, by a talented artist. How pleasant, when the day's run is finished and the deck cleared, to rest in some pleasant harbor and enjoy the latest news, music or the thrilling details of a championship bout. But you know what joys are riding the ether waves.

There are now more than six hundred broadcasting stations situated throughout this country and Canada entertaining thousands of listeners each night.

(Continued on page 66)



It is a simple matter to install one of the newest type sets on the modern cruiser, either in the cabin or out on deck, where the programs may be enjoyed

Movies and Jazz for the Eskimos

Famous Explorer on Schooner Bowdoin to Keep in Touch With Civilization by Radio Phone While Off on a New Voyage

By E. F. McDonald, Jr.

AN interesting event transpired recently at a dinner in Chicago in honor of Donald B. MacMillan, the Arctic explorer, who plans to sail again to the far north in his 89-foot schooner Bowdoin. Up to the time of this dinner, Mr. MacMillan had no thought of using radio equipment on his cruise. In his talk, he brought out the fact that few people realize how severe are the hardships of the north. He stated that it was not the lack of food nor the severe cold. The real hardship is the absolute solitude, with everything going out and nothing coming in. Men lose their minds and Arctic explorers have on other expeditions been forced to shoot some of their own men.

Mr. MacMillan, when he was told that he could put on his ship a radio receiving set and not only have the news of the world each day, but the music from the various cities in the United States, began to realize what radio would mean to him. He would not at first consider radio because of his lack of space, but incidentally it might interest you to know that before the dinner was through, Mr. MacMillan said, "McDonald, when you go up to my ship, Bowdoin, you will find four berths in the forward end of the forecabin and if you want to tear those out, you may do so." He was convinced that he should not only take with him a radio receiving apparatus, but powerful sending apparatus, so that he could be in constant communication with civilization and report the progress of the trip.

Now, heretofore when Arctic explorers have gone into the north, they have been forgotten until their return, and then they had only one story. MacMillan is to send back to the publications of the United States his reports week by week. I presented Mr. MacMillan with complete Zenith receiving and sending apparatus and on the first test made with his apparatus, rigged up an antenna the duplicate of which will be used on his ship; the Zenith apparatus had no difficulty in carrying on two-way conversation from Chicago with Los Angeles on the West, and Hartford, Conn., on the East. With the receiving set Germany was copied for a period of one hour during the tests.

Directly after this dinner we went East and interested Hiram Percy Maxim of gun and silencer fame, who is also the president of the American Radio Relay League. He is the Daddy of the Radio Amateurs of the United States. Mr. Maxim agreed to comb the United States for the best five radio operators obtainable. The reason for picking five was that he was to submit five best men so that Mr. MacMillan could take his choice of them, for, as Mr. MacMillan stated, it was not physique or ability that counted in the Arctic half as much as personality. Mr. MacMillan has now selected his operator from the five submitted. Mr. Maxim has also agreed to have the Amer-

ican radio amateurs who are members of the American Radio Relay League, totalling approximately 100,000, stand by at certain hours each night in order to get the messages that will come back from the frozen north.

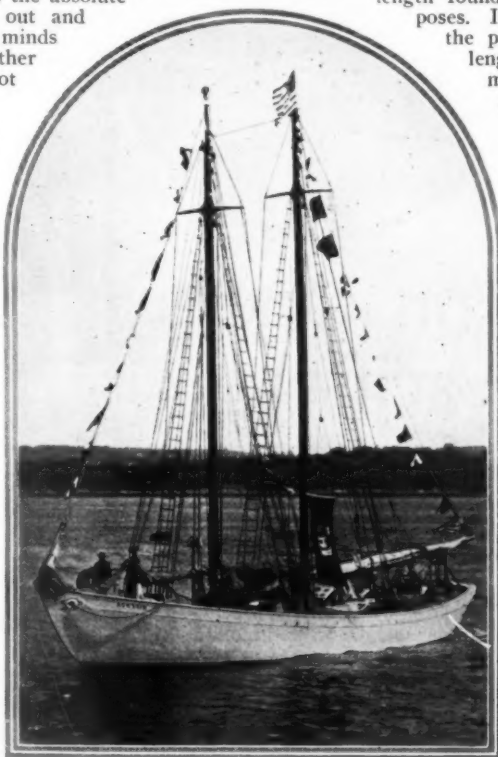
The United States Government granted the broadest license ever granted for sending apparatus. They issued the call letters WNP, meaning Wireless North Pole, and the privilege to send 200, 300, 400 metres, or any other wavelength found necessary for experimental purposes. In other words, Mr. MacMillan has the privilege of sending on any wavelength he desires, in order to get his messages back to civilization. Mr.

MacMillan on this trip takes a crew of only seven men and intends to be gone fourteen months. However, when he headed the Crocker Land Expedition in 1913, he intended to be gone only one year, but was frozen in until 1917 and did not know the war had started until his return. There will be no telling how long Mr. MacMillan will be frozen in, in the north.

Some very interesting data will be collected through means of the radio on this Arctic Expedition. This is the first time that sending apparatus has ever been taken within the auroral band and it will be interesting to note with what success messages can be sent back during the period of 141 days of continual daylight, a period during which, even though Mr. MacMillan's ship sends its messages at sharp midnight, they will have to traverse many miles of daylight before hitting darkness. The messages that are to be sent from this country to Mr. MacMillan will be sent from the Zenith-Edgewater Beach Hotel Broadcasting Station WJAZ, which inci-

dentally is the most powerful broadcasting station in the world, opened in Chicago about May 12. It is powered by a 4,000-volt, 10 kilowatt generator that should have no trouble in hurling the concerts and messages to Mr. MacMillan in the Arctic.

The equipment to be taken along on this expedition will not differ greatly from that which was taken previously. The cruise will be made with seven men in the crew and it is expected to go to within seven hundred miles of the pole. In addition, several Eskimos will be added to the crew at a convenient point, and carried along. An abundant supply of phonographs will be taken along, which will be distributed among the native tribes of Eskimos, which are expected to while away the time during the long winter night. In order that there may be no shortage of provisions in case of an unexpected prolongation of the voyage, a large supply of pemmican will be taken along. This is a highly concentrated form of food and is equivalent to eight or ten times its bulk in ordinary provisions. It is made from the round of beef which is cut into strips and dried.

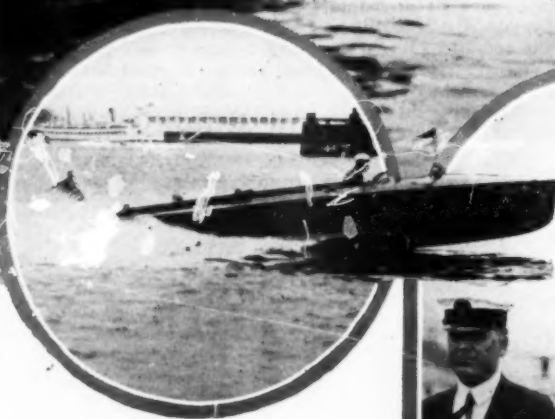


The 89-foot Hand designed schooner which Donald B. MacMillan is taking to the Arctic regions a second time



Scoot, the fast speed boat of Leo Berner

Alvin H. Frank driving Lucky Strike I, in a special trial



Active Season Opens on the Pacific

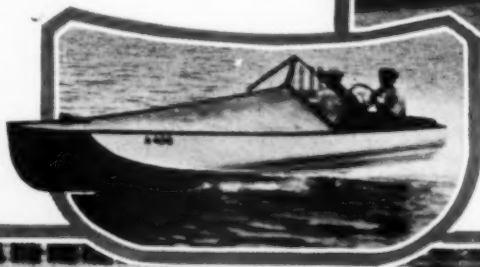
Exciting Sport and Keen Competition Characterize First Races in Southern California

AFTER a dormant period of four months following Commodore Gar Wood's appearance in these parts with Miss America I and Miss Detroit VI, the 1923 yachting season was opened in Southern California by the California Yacht Club of Los Angeles with the third annual mile speed trials, Sunday, May 6; an inspection of more than a score of its fleet of some 300 craft, an elaborate dinner and dance, Saturday, May 12; the fourth meeting of the representatives of the Southern California Yachting Association and power and sailing races off the harbor, Sunday, May 13.

Capturing the Los Angeles Athletic Club trophy, but failing to equal the record established a year ago, Alvin H. Frank's Lucky Strike II, formerly W. W. Paden's Hurricane II, champion speedboat of the Pacific Coast, won the mile race against time in the Long Beach channel.

Frank's craft was the only entry in the free-for-all class and the boat's best time was clocked at 1 minute, 9 and 1-5 seconds or 54.19 miles per hour. Skipper Frank drove Lucky Strike II and Harry Woorster rode as mechanic (Continued on page 88)

Ralph Hamlin's little Speeder Joker



The inspection party, Captain Ed. Gourley, Mrs. Overton, Paul Jeffers, and Commodore Overton



Lucky Strike II in the third annual speed trials at Los Angeles, being driven by Alvin H. Frank

White Cap, A Special Runabout

Clever Design for a Speedy Craft Particularly Adapted to the New Wisconsin Engine

Designed Exclusively for MoToR Boating

By John L. Hacker

COMPLYING with numerous requests for a fast, attractive-looking runabout of about 25 feet in length, the design which accompanies this article has been prepared. It is in line with the times that speed should be one of the first considerations of the modern boat. This boat has been designed especially to accommodate the White Cap, six cylinder engine recently perfected by the Wisconsin Motor Manufacturing Company. The excellent design of the engine as well as the boat will yield the maximum smoothness of operation and will produce a speed of from 22 to 23 miles per hour. Anyone who will build a boat according to these drawings and specifications will not be disappointed in the result. Naturally, it is not intended that changes be made from the design as published, since all necessary details have been carefully prepared in advance and the necessary strength has been provided without sacrificing anything in the way of speed. The most suitable propeller for this combination of boat and engine is a three-blade wheel of 16-inch diameter and 18-inch pitch, which the motor should turn at approximately 1,800 revolutions.

The first requisite for the successful construction of this or any other boat is a suitable building or shop. A level floor on which to lay out the work and erect the hull structure is essential. The construction will follow general practice in that it will be first necessary to construct molds for each of the several stations of the hull. The data for these is taken from the offset table and it must be remembered that the dimensions given are to the outside of the planking, the thickness of which must be allowed for. The keel with the knee and transom properly assembled upon it is erected in accordance with the drawings and then the molds are also placed and suitably stayed so that they will be rigid. Temporary battens are screw fastened to the molds, tying the whole structure rigidly together. Seam battens for the planking seams can then be properly fitted and placed, notches being cut in the frames to suit. A sawn frame will be fitted at each station point of $\frac{3}{4}$ -inch hackmatack, if possible, otherwise the side and bottom members may be prepared separately and halved together at the chine. In this case the material may be white oak or ash.

The planking at the sides of the boat will be $\frac{1}{2}$ inch in thickness, or in case mahogany is used, $\frac{7}{16}$ inch will be sufficient. The bottom planking will be $\frac{1}{16}$ heavier than the sides and of the same material. All planking should be applied in the conventional way with the seams properly made, so that they can be caulked and made watertight as required, in all first-class work. Such details as are involved in laying the decks and bulkheads and trim for the interior are more or less self-evident from the drawings and do not require particular explanations. The finishing of the hull is largely a matter of personal taste, and white paint is generally considered to be the most attractive color for boats of this type. In such cases where the planking is mahogany, it is customary to stain this all

uniformly and then finish with several coats of varnish in the regular way. For a varnished hull, it is advisable to rub down the successive coats between applications to a perfectly smooth surface, and if the varnish is applied properly, a glass hard finish will result.

As mentioned, the engine is the six cylinder model White Cap, and it will be merely necessary to set it in place on suitable engine stringers and hook it up to the shaft and tanks.

All necessary connections to waterlines and batteries, etc., will naturally have to be made before the engine will be ready to run.

Any questions or difficulties which may arise during the construction of this hull can be referred to the Editor of MoToR Boating, or to the designer, who will be glad to answer them.

SPECIFICATIONS

The principal dimensions for this boat will be 25 feet length over all, 6 feet 1 inch beam and 24-inch draft. The freeboard at the bow will be 2 feet 6 inches, while at the stern it will be 1 foot 9 inches.

General: All material which is to enter into the construction of this boat is to be of the very best quality for the respective purposes for which it is intended. All workmanship shall be strictly first class, and no deviation whatever shall be made in the lines or otherwise, without the permission of the architect. Any details which may be shown on the drawing and not on the specification, or vice versa, shall be considered as being in both.

Keel, Stem and Knee: The keel is to be shaped from a piece of white oak and will be $1\frac{1}{4}$ by $3\frac{3}{4}$ inches. It should be properly beveled and rabbeted to suit the planking. It is to be in one piece of perfectly clear, sound stock. The stem is to be of $1\frac{1}{2}$ -inch white oak, shaped as per plan. The knee will be of the same thickness, preferably of natural crook hackmatack, otherwise of white oak. It should be securely bolted to the stem with three $\frac{3}{8}$ -inch galvanized bolts and bolted in a like manner to the keel and properly rabbeted to suit the depth of planking. The forward edge of the stem to be pointed down to a $\frac{1}{2}$ -inch face. A hole to be bored through to the keel for the shaft, which should be properly aligned to suit the motor, allowing $\frac{1}{8}$ -inch clearance or a hole $\frac{1}{4}$ -inch larger than the size of shafting to be used. A metallic shaft log can then be bolted on, which item can be furnished by the architect.

Transom: The transom will be of curved type with an upper and lower member, sawn to a proper radius from a 3-inch plank of either oak or ash and finished to 1-inch thickness. The stern post will be $1\frac{1}{4}$ inches by the width of the keel and will notch into the other members. There will be side members of oak, ash, or walnut, which shall be halved into the upper and lower members. There will also be two $1\frac{1}{2}$ -inch cleats on each side to support the transom. Fit $\frac{1}{2}$ by $1\frac{1}{2}$ -inch batten to take the seam, if one piece is not procurable to cover the transom. The entire frame is to be securely screw fastened, and the transom can then be covered with $\frac{1}{2}$ -inch mahogany, preferably in one piece. The seam batten should be so placed as to suit the width of material. Transom is to be entirely screw fastened, all holes being counterbored and wood plugged.

Frames: There will be a $\frac{3}{4}$ -inch sawn frame at each station, preferably cut from a hackmatack knee. If not obtainable, side

NEXT MONTH

CHARLES D. MOWER has prepared for you a wonderfully clever design for a handy little utility boat of 14-feet length. This is fitted with a sail and centerboard, so that it will provide sport for the sailors, and also particularly designed to accommodate any of the excellent outboard portable motors now on the market. The addition of these little engines converts this into a first class motor boat which will hold its own with any of them. The design has been well thought out and carefully prepared. It will follow our usual form, and appear as a large size, ready to build, blue print supplement.—Editor.

and bottom members may be halved into each other at the chine. Use white ash or oak and make it approximately 3 inches deep on the bottom, and 3 inches tapering to $\frac{2}{4}$ inches at the top, for the side members. Fasten securely with No. 8 copper rivets with four on each side, leaving the center space clear for fastenings to the chine. An optional fastening may be made without halving by the use of 3/16-inch galvanized bolts. Frames are to be joined with a $\frac{1}{4}$ -inch oak floor tie, which is increased to $\frac{1}{4}$ inches on stations 6, 7 and 8. These are to be either rivet or bolt fastened, with at least four fastenings on each side, and through bolted to the keel with $\frac{3}{8}$ -inch bolts as far as station 4. From this point aft there will be two 5/16-inch fastenings, extending through to the rabbet. The bottom member of frame can be one continuous piece from chine to chine, beginning at station 9 and running aft. If this is used, 1-inch stock will be sufficient.

CHINES: Chines can be shaped from 2 by 2-inch white oak or yellow pine, oak preferred. They are to be in one length and of absolutely clear stock. They should be properly beveled and rabbeted, as per earlier instructions, and can be slightly tapered at the forward end. They are to be securely screw fastened to the stem with screws, and reinforced with a substantial knee. The fastenings at the stern should be made in a like manner, and all rivets to frames shall be $\frac{1}{4}$ -inch rod over burrs.

CLAMPS: Clamps are to be of $\frac{5}{8}$ by $\frac{1}{2}$ -inch yellow pine or fir, and to be fastened to stem or transom with a breast-hook or knee. They are to be let into the frames, properly faired, and screw fastened to them.

PLANKING STRINGERS: These are to be 7/16 by $\frac{1}{4}$ -inch fir or yellow pine on the sides, and 7/16 by $\frac{1}{4}$ -inch yellow pine on the bottom, preferably in single lengths, and of clear, sound stock. They are to be spaced approximately as shown on the plans, notched into the frames, and securely screw fastened to them. The stringers should first be placed and clamped into position, after which it should be faired perfectly. Frames can be marked and cut out, after which the stringer is inserted, and permanently fastened. It is to be screw fastened to the stem, and to the transom reinforcement.

ENGINE STRINGERS AND BED: The engine stringers are to be made of $\frac{1}{4}$ -inch Aero spruce, and of such lengths as are indicated on the plans. They are to be let in over the frame floors about 1 inch. The tops of these will form the floor, and they are to be through bolted to the frame floors with 5/16-inch galvanized bolts. The engine bed is to be approximately as per plan, and of $\frac{1}{4}$ -inch oak or ash. It is to be checked in over the floors, and through bolted to the stringers with eight 5-16-inch bolts. Shaft alignment and engine bed shown on the drawings is suitable for the White Cap 6 motor.

FRAME IN GENERAL: After the plank stringers have been inserted and properly let into the frames and faired, they may be fastened into place, and the entire frame trimmed by beveling the frames in line with the stringers, etc. A small pine plug to act as a stop water should be fitted where the seam comes in the stem and knee. All timbers in the frame shall be painted with lead paint before the permanent fastenings are made. The next operation will be the planking. This is performed by planking the sides of the boat between the sheer and the chine, the hull having been erected with the keel on the stocks. At this point the hull can be turned over, the stem and stern plumbed, and the keel aligned. The bottom plank stringers will be inserted, and the planking completed in the same manner as the sides. The experience of the architect has proven this to be the most satisfactory method of construction, and is the one which is followed in his own shops. In making the frames, always lay them out correctly on the body plan on paper, and see that they are to the correct lines, and then make a temporary fastening with about two screws. Tie them across with a piece of $\frac{3}{4}$ by 3-inch pine at the sheer height. Fastenings are made in the same way to the floor, after which they are taken off the plans, and the permanent boat fastenings installed. All frames are to be set in over the keel so that the bevels will meet.

PLANKING: Side planking can be of $\frac{1}{2}$ -inch white cedar, white pine or butternut, or, if preferred, mahogany may be used, in which case 7/16-inch thickness will be sufficient. If specified materials are not available, local material of suitable character can be used. It is necessary that the planking

material be light and clear and in as long lengths as practical. It is to be spiled to meet the centers of the plank stringers. The bottom planking should be of the same material, with the exception that it shall be $\frac{1}{16}$ -inch heavier. All butts are to be made on quartered oak butt blocks, with at least eight fastenings on one side, and not less than 8 inches in length to fit in between the stringers. All planking is to be fastened to the stem, keel, chine, and transom, as well as to frames with screws. Use $\frac{1}{4}$ -inch No. 8 galvanized screws on frames, stem and stern, and 1-inch No. 8 on keel and chines, and $\frac{3}{8}$ -inch No. 8 on sheer. Planking is to be copper riveted through steam bent frames and either copper riveted or clinched nailed to the stringers. All holes are to be counterbored with a Forstner plug bit, and wood plugged with standard $\frac{3}{4}$ -inch plugs. Butts and planking to be not less than 2 feet apart. A slight caulking seam is to be allowed on the chine and on the bottom seams, which are to be lightly caulked with spun cotton, rolled in, and not hammered. The seams to be about 3/32 inch. All seams above the chine on this side are to be closed seams. Place a strip of cotton flannel on the stringers before applying the plank. Stick this on with a little spar varnish, which will obviate the necessity for any caulking. When the planking is completed, and while the boat is turned upside down, dress the entire job thoroughly, and sand well. Do all necessary caulking, sand lightly, and when entirely smooth, if it is to be a painted job, apply a coat of hot oil over the entire surface. Use half turpentine and half boiled linseed oil, applied boiling hot. Turn the boat over, and apply the same treatment throughout on the inside of the hull. On the second day following, apply a heavy coat of pure lead paint, of the desired color, on the inside. This will finish the interior painting, after which the decking and finishing can be completed. It is advisable to paint the boat on the inside at this time, as it will be perfectly clean, and the time required for cleaning it out again for another painting will be saved.

DECK BEAMS, FRAMING, ETC.: Main deck beams $\frac{3}{4}$ by $\frac{1}{4}$ inches of white oak or ash. These are to be flush with the frames and supported with a knee. Smaller beams are to be $\frac{3}{8}$ by $\frac{1}{4}$ inches and slightly notched into clamp. All to be securely screw fastened. Hatch framing will be $\frac{3}{4}$ by $\frac{1}{2}$ inches with a trimmer of the same size, all of ash or oak. Hatch cover frame to be $\frac{3}{4}$ by $\frac{1}{2}$ -inch white wood. Small beams $\frac{5}{8}$ by $\frac{1}{2}$ inches.

DECKING: Decking is to be $\frac{3}{8}$ -inch covering boards with a mahogany center plank. Decking of $\frac{3}{4}$ by $\frac{1}{2}$ -inch white pine or mahogany strips with a uniform seam of about 3/32 inch. Dress the deck roughly, then fill the seams with Jeffrey's black marine glue if pine is used, and yellow glue if mahogany is used. After this is set finish the dressing. All holes are to be counterbored and wood plugged with covering board and center plank screw fastened. The decking can be fastened with $\frac{1}{2}$ -inch galvanized iron nails. Cover hatch in the same manner. If canvass decking is to be used, get out the covering boards and fasten temporarily. Now apply $\frac{3}{8}$ -inch decking in about 6-inch widths, making the seams come on the centers of a $\frac{3}{8}$ by $\frac{1}{2}$ -inch batten, and either screw or clinch nail fasten. When completed, dress and take off covering boards and apply a coat of lead paint. Next apply canvas drill or duck of light weight, on either heavy paint, marine glue, or composition, and fill. Next apply the covering boards, wood plug, and finish in the regular manner. It is suggested that the canvas be filled and then primed, after which two or three coats of Japan color can be applied, and the whole varnished with the balance of the deck. If the decks are natural and pine is used, varnish the pine first coat before filling the covering boards, so that no stain will come on the pine.

COCKPITS, FORWARD: This is to be arranged as per plan with $\frac{3}{8}$ -inch trimmers, fillers, etc., to the proper shape. The coamings should be $\frac{3}{8}$ -inch thick, all screw fastened and wood plugged. Install a seat as indicated, with $\frac{5}{8}$ by 3-inch front, supported with a riser on each side, and further supported with a post at each stringer. There will be cleats extending to the bulkhead and seat top to be of 9/16-inch pine. A post may be fastened on each side in alignment with the coaming, and sides sheathed forming a pocket for storage on each side. Flooring to be of 9/16-inch pine in cleated sections, to be laid towardships and to extend through the coaming lines. The coamings are to finish flush with the deck and to have a $\frac{3}{4}$ by $\frac{1}{4}$ -inch cap extending approximately $\frac{1}{4}$ inch into the cockpit. This is to be rounded off on the in and out sides. All securely screw fastened and wood plugged. Entire cockpit finish, except the flooring, to be of mahogany. Seat back to be upholstered.

(Continued on page 90)

Safe Methods of Carrying Extra Fuel

Useful Suggestions for Installing and Providing for an Emergency Supply of Gasoline for a Long Cruise or Race

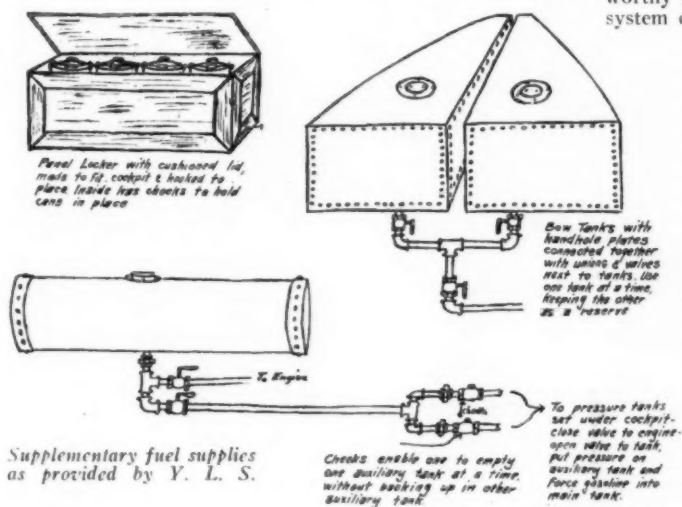
Answers to the Following Questions Published in the May Issue

"Describe and illustrate a safe and convenient method of storing extra gasoline aboard a cruiser, for a long race or cruise, giving special attention to economy of space"

Emergency Supplies Are Valuable

(The Prize-Winning Answer)

EMERGENCY supplies of gasoline are often real life-savers, and in long distance races or cruises, mean money by being able to buy good, clean fuel for a nominal price at the large oil wharves. Then another item to



Supplementary fuel supplies as provided by V. L. S.

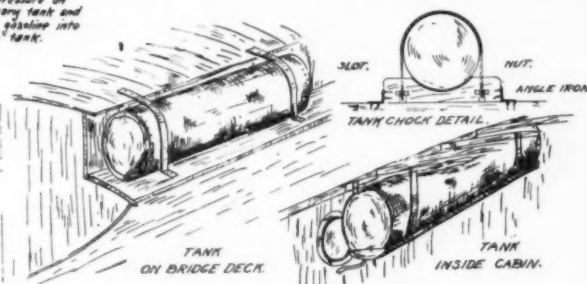
be looked at carefully is, the different grade of gasoline handled by the different companies. If you can carry sufficient fuel aboard to make the round trip, it is not necessary to make carburetor adjustments each time you fill the tanks.

The type and size of boat will govern the method of carrying emergency fuel supplies, as the amount of available space varies with each individual craft. Expense or personal preference will have to be considered, also, therefore I will try to show several methods which are applicable to different cruisers.

There are really only three good safe methods of carrying fuel in any type of boat, namely: case gasoline kept in the original containers until needed, gasoline carried in five or ten-gallon galvanized cans, and auxiliary tanks arranged so as to empty into the main tank by either force feed or gravity. Case gasoline is really the best and safest manner of carrying, as the cans are air tight and they can be stored in one or several available places. Gasoline carried in the regulation galvanized five or ten-gallon cans save you money, as the cans can be used over and over again and stored away until needed. These cans can be made practically air tight by simply cutting cork or rubber

gaskets for the screw tops; and can be stored as advantageously as the case gasoline.

Tanks are very good on the larger boats, as they can be made to fit in some unused corners and piped direct to the engine or to the main tank. Only on the larger boats, however, should they be installed high enough to give gravity feed, otherwise, the change in trim may make an unseaworthy craft out of a really good boat. A good pressure system can be used, feeding from the air tank or from a small hand air pump, installing the tanks low, as under lockers, decks, or cockpit floor, and the boat's trim or seaworthiness is in no way affected. The best tank system is to install your main supply tanks so as to carry twice the amount of gasoline necessary for ordinary use. By only using one tank at a time you are able to carry the necessary supply for any practical purpose, and in case of extra long cruises you can carry both full. These tanks should be connected together from a main supply pipe of large diameter, where the tanks for emergency are pressure operated, each should be equipped with a non-return check, so one tank can be emptied at a time by only operating the valves near the main tank. Small tanks can also be installed low in the boat, with a small hand pump similar to a bilge pump, soldered into the top of the tank and piped to the main tank. It is only necessary to pump from one tank to the other.



Temporary tank arrangements suggested by W. B. M.

In cases where there is no available room below decks, the best system is to carry the fuel in galvanized cans in an emergency locker, as shown. This is made up neatly and finished to fit and match the other woodwork. It should be equipped with two or more hooks to fasten it in place. The interior is fitted with chocks to hold the necessary number of cans in place so they cannot shift or rattle, and the entire rig is easily removed and stored when not needed for long cruises or races.

Summing up, I would say that the gravity feed tanks, (Continued on page 58)

Rules for the Prize Contest

ANSWERS to the above questions for the September issue, addressed to the editor of MoToR Boating, 129 West 30th St., New York, must be (a) in our hands on or before July 25, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before July 25. The editor reserves the right to make such changes and suggestions in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions on page 39, any article or articles sold by an advertiser advertising in the current issue of MoToR Boating of which the advertised price does not exceed \$25, or a credit of \$25 on any article which

sells for more than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

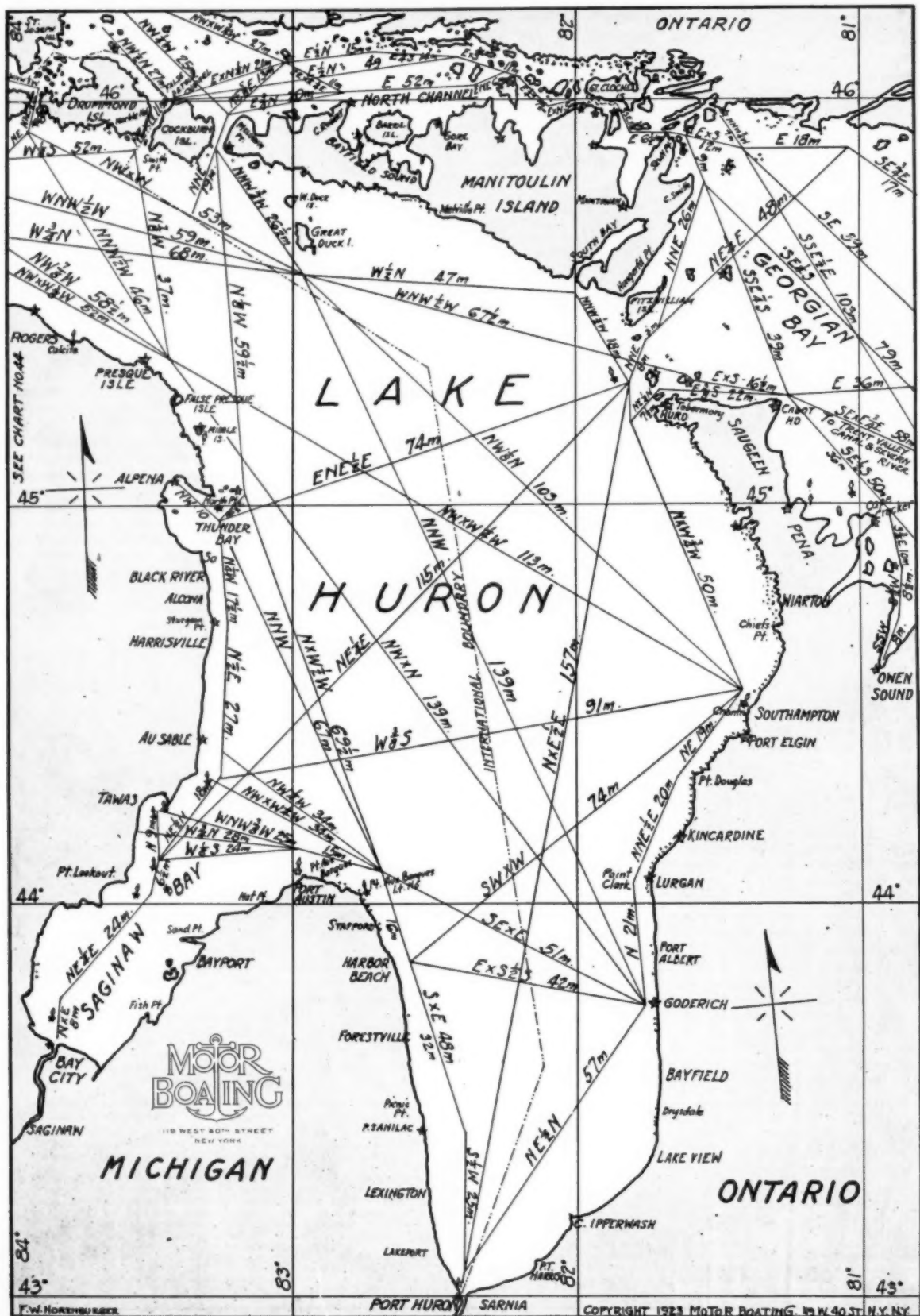
For answers we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR Boating of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

Motor Boatman's Chart No. 45—Lake Huron

For Use In Connection With U. S. Lake Survey Charts Nos. 6, 51, 52, 53, and 54



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World's *Finest* Yacht Club Opens In Detroit

ONE of the notable events of the yachting year took place on the morning of Decoration Day, when the new million-dollar home of the Detroit Yacht Club was formally opened and dedicated to the service of its members. The occasion was made a memorable one and all who were present throughout the entire day were much impressed with its completeness. The new building is the costliest, largest and most complete clubhouse of its kind in the world. It is situated on an island of its own, just off Belle Isle, Detroit, and is 400 odd feet long and 250 feet wide. The building is recognized as a monument to the far-seeing vision of A. A. Schantz, vice-commodore of the club. Through the efforts of the officers and directors, headed by Commodore Gar Wood and Schantz, the building has been made possible and stands today as the most wonderful edifice of its kind.



¶The New Million Dollar Home Of the Detroit Yacht Club Opened with Elaborate Ceremonies By Commodores Gar Wood and A. A. Schantz

Pilgrim, A Clever Speed Cruiser



The express cruiser *Pilgrim*, owned by A. G. Paine, Jr., of New York, President of the New York and Pennsylvania Company, has recently been re-powered with a 225 h.p. Sterling six cylinder Dolphin engine, with which she does better than 21 m.p.h. Her dimensions are 43-feet 4-inches long and 9-feet 3-inches beam

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

Caille Company Growing

IT is announced that Harry S. Masoner has been appointed Sales Manager of the Caille Perfection Motor Company of Detroit. Mr. Masoner has been associated with this company for some time and has been covering the southern territory. He is unusually well equipped for the position he is assuming and is a thorough sportsman and fisherman. His intimate knowledge of boating and more particularly row boat motors will stand him in good stead and will undoubtedly be of great service to him in his work. A. B. W. Mills will be associated with Mr. Masoner in the Sales Department of this company.

Sea Sleds Licensed Abroad

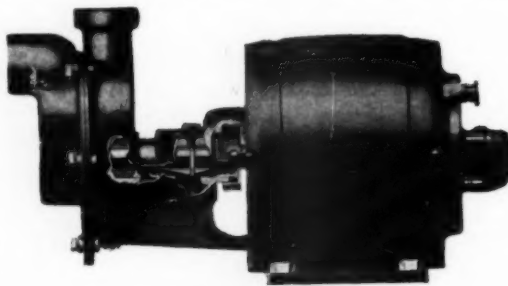
The Sea Sled Company of West Mystic, Conn., advises that Messrs.



Swan, Hunter and Wigam, Richardson, Ltd., have secured the exclusive manufacturing and selling rights for Sea Sleds under the Hickman patents in United Kingdom, Europe, and Japan. Work will be begun immediately on some sea sleds at the works of Phillip & Sons, Ltd., Dartmouth, England, one of the plants controlled by this company. This firm has built vessels for the British navy and numerous commercial boats over a period of many years. It is expected that this new connection to the Sea Sled interests will result in a larger scale production of sea sleds to meet the varied requirements of different companies. Boats for United States and South America will continue to be manufactured at West Mystic, Conn., by the Sea Sled Company, Ltd., and in Canada by Canadian Vickers, Ltd., of Montreal.

The Mackinac Race

The motor section of the Chicago Yacht Club at a recent meeting decided to hold a cruise to Mackinac Island on July 21, 1923, on the same date as the sailing race to the same point. Motor



A fine little motor driven centrifugal pump for all sorts of general service on board a yacht, has just been developed by the Arrow Pump Company, of Detroit, and is a distinctly useful bilge pump on account of its freedom from corrosion and injury by foreign matter in the water

boat owners on Lake Michigan are invited to participate in this cruise.

Canvas Covers

The largest lot of tarpaulins ever put

This new 35-foot H and cruiser has just been finished for Booth Tarkington, one of America's most renowned playwrights. This boat with a beam of 8-feet and a Sterling Sea-Gull engine at 1,500 r.p.m. does 22 miles

up for sale was purchased during the first week in May by The Scott Manufacturing Company of Omaha, Neb. More than 35 carloads make up this tremendous assortment. The paulins are all government stock and were originally made according to government specifications for use in the Amer-

ican Expeditionary Forces.

Scott has sorted the entire lot and will have them on sale at four central points, New York, Chicago, Omaha and Seattle. New York and Seattle will export a large number from their respective stocks, it is said.

The tarpaulins were made for the army in three sizes, 17 x 30, 20 x 20 and 20 x 40, but Scott has cut many of them into smaller sizes for use by contractors, road builders, shipping and boating, and any of the hundreds of uses to which extra heavy waterproofed canvas is adapted.

Some of the tarpaulins cost the government as much as \$100, but on account of buying the entire lot Scott will place them on the market for less than what the material alone would cost at the present time.

Scott, besides being president of the Scott Manufacturing Company of Omaha, is also president of the Scott Tent & Awning Company and was formerly president of the National Tent & Awning Manufacturers' Association.

New Bosch Treasurer

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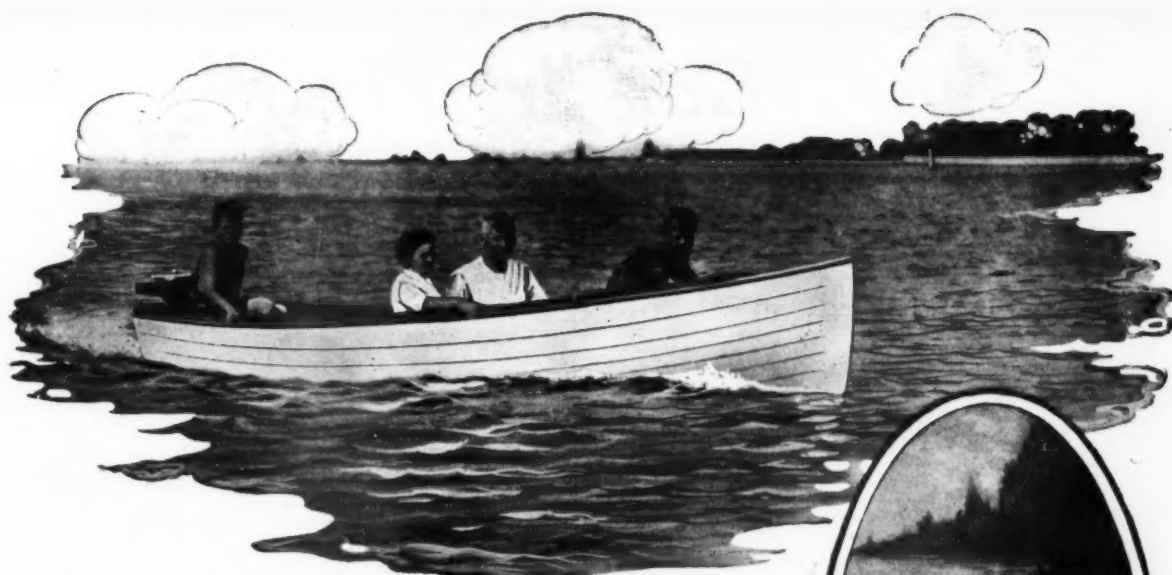
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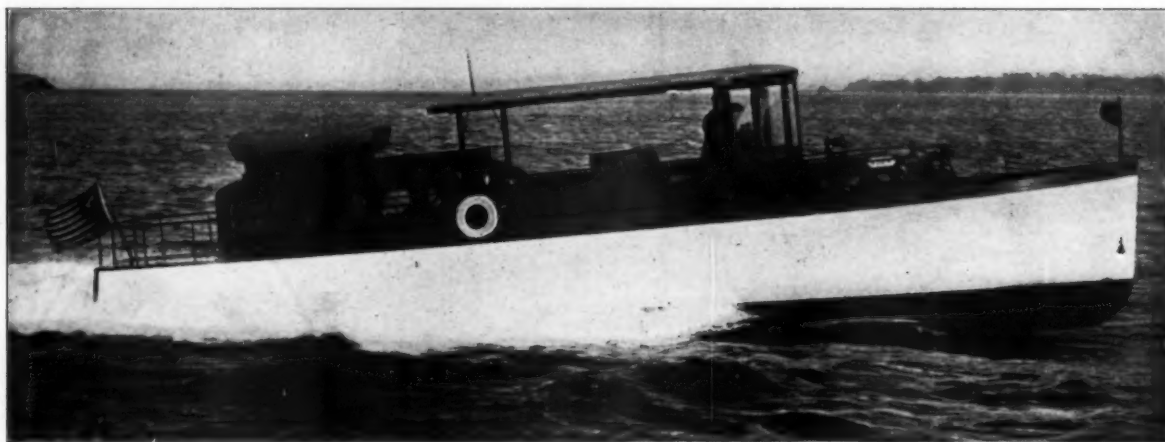
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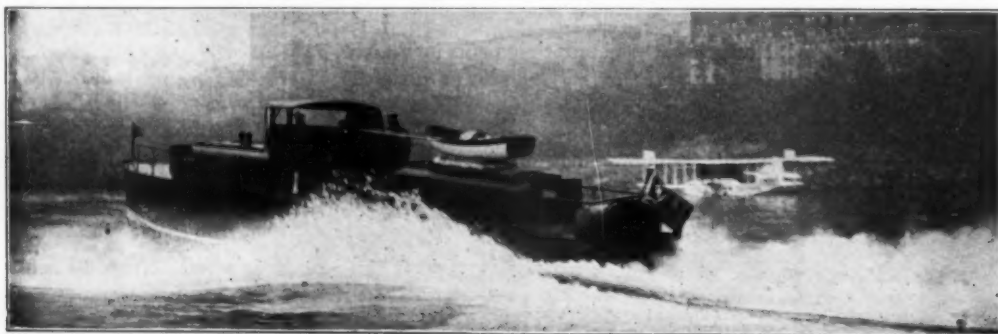
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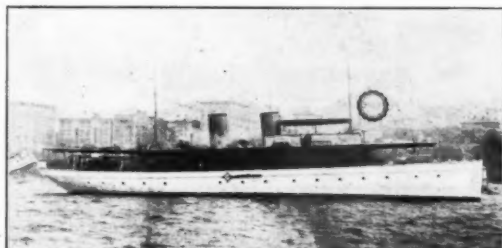
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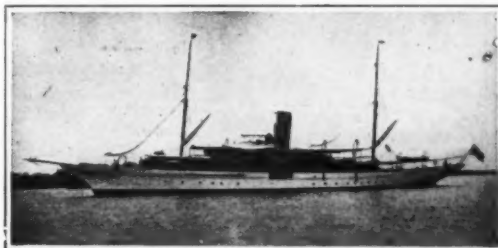
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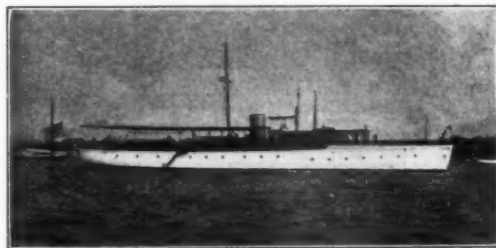
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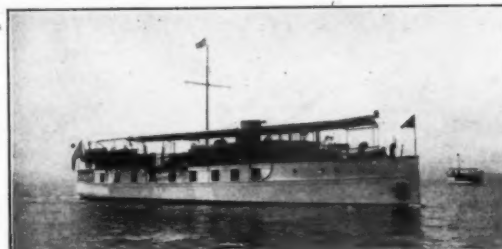
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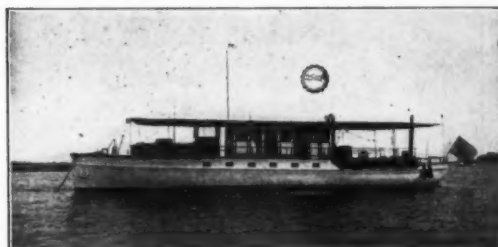
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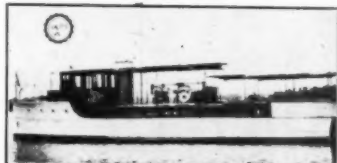
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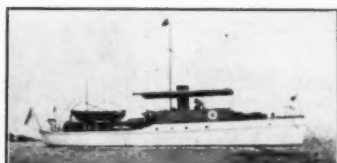
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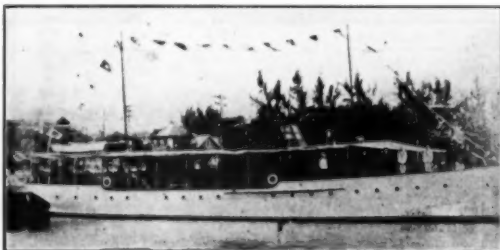
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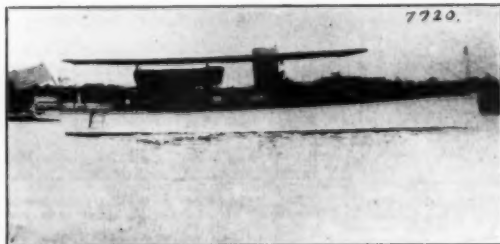
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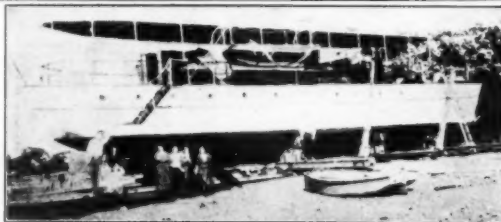
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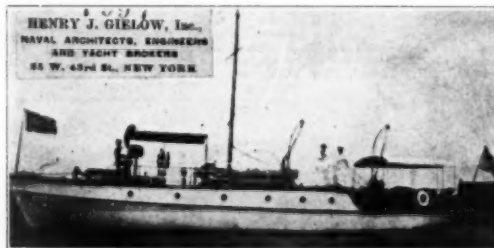
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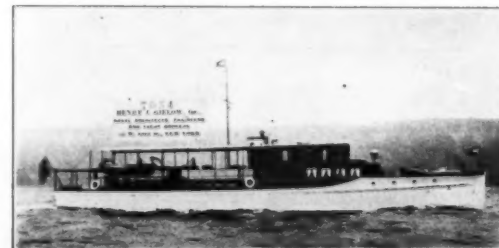
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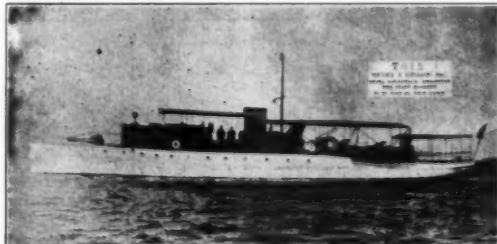
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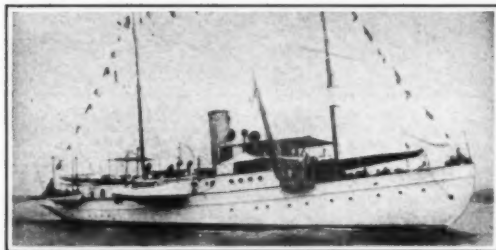
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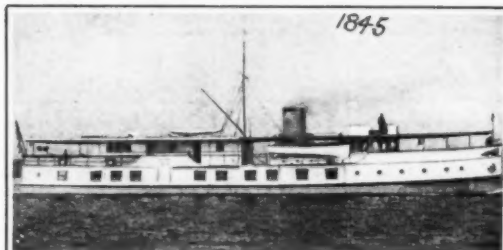
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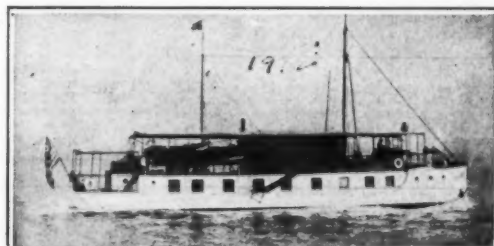
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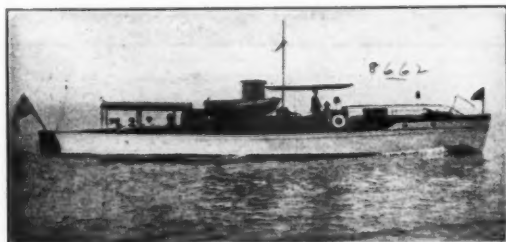
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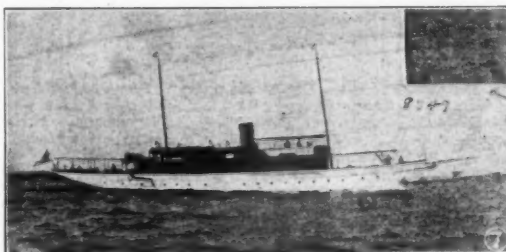
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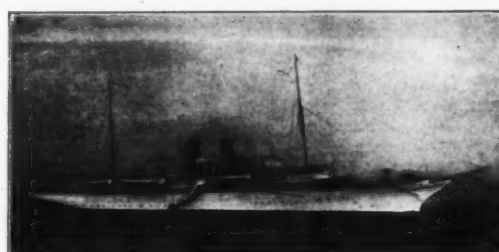
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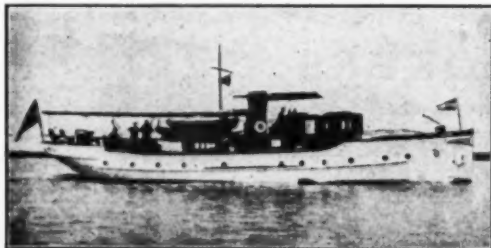
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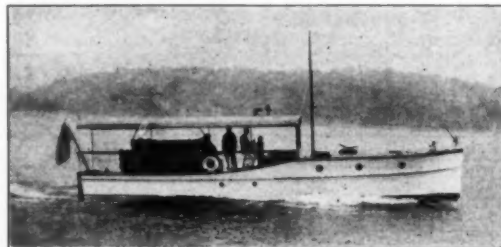
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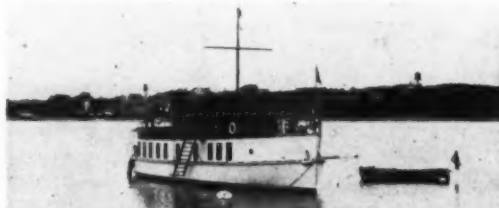
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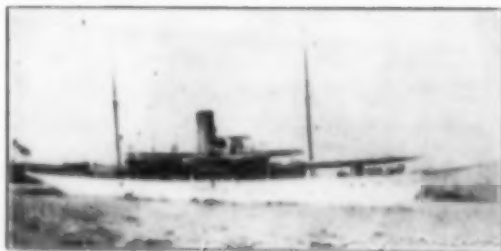
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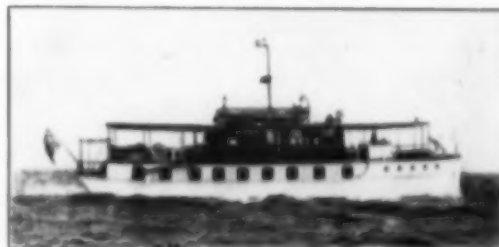
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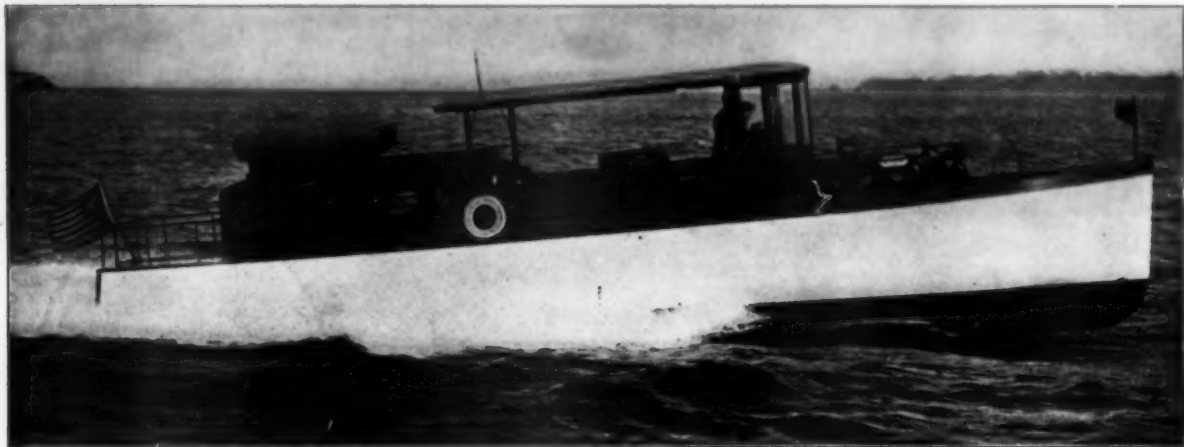
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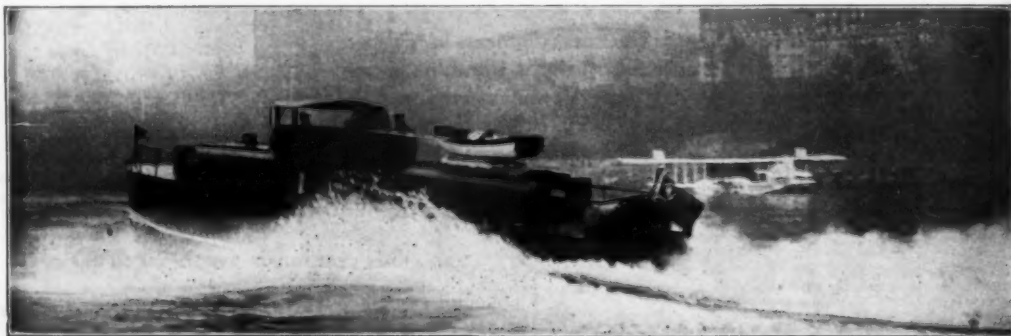
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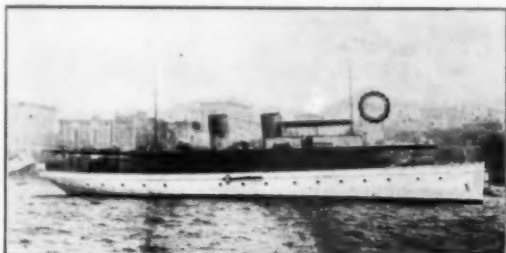
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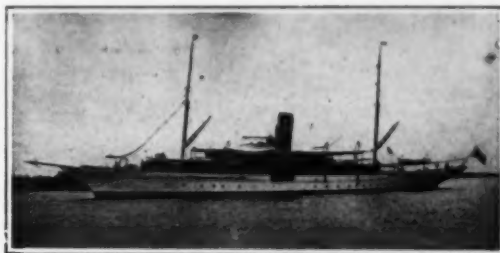
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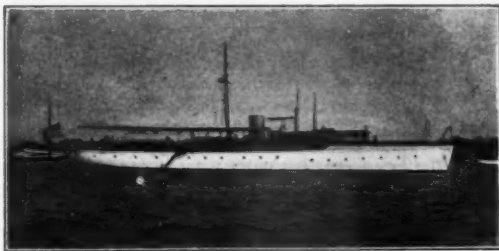
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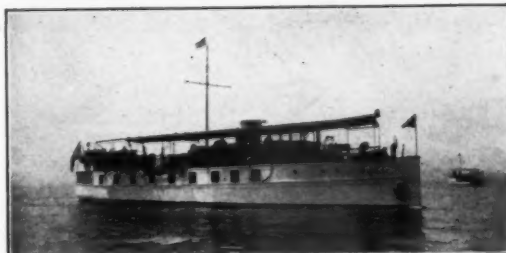
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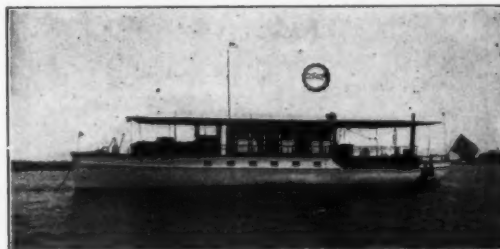
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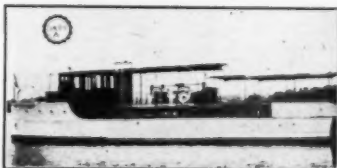
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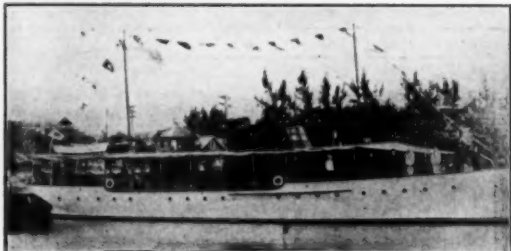
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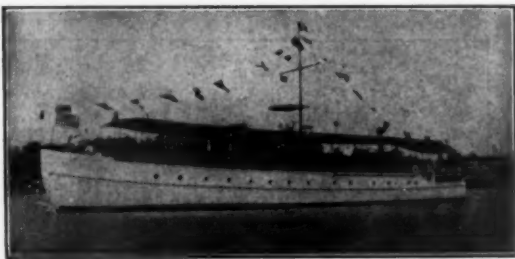
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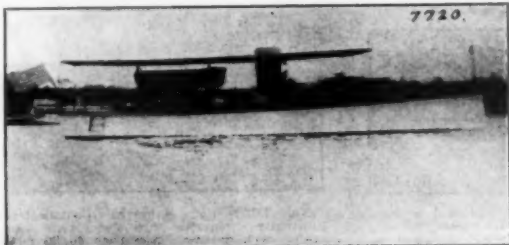
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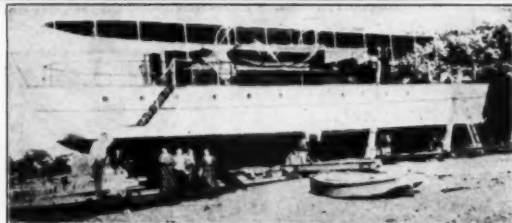
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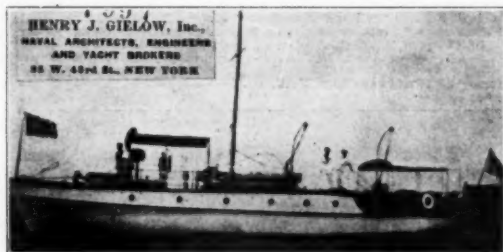
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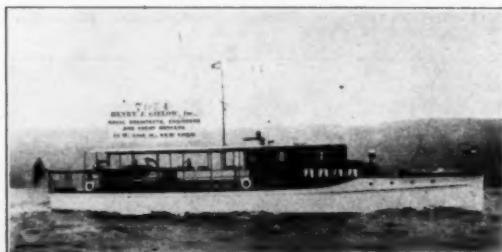
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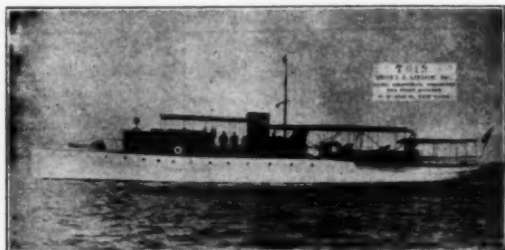
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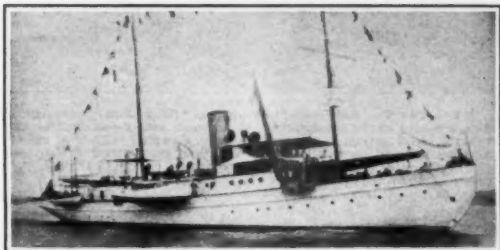
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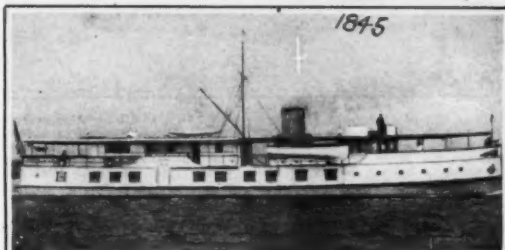
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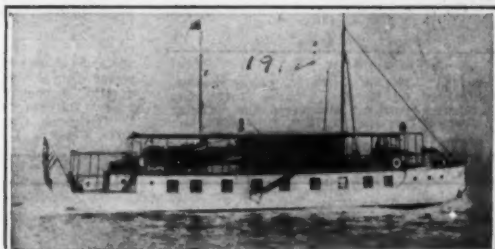
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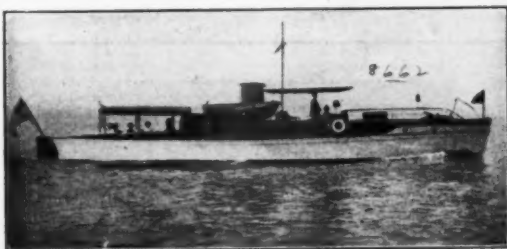
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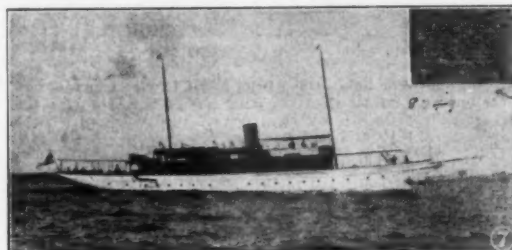
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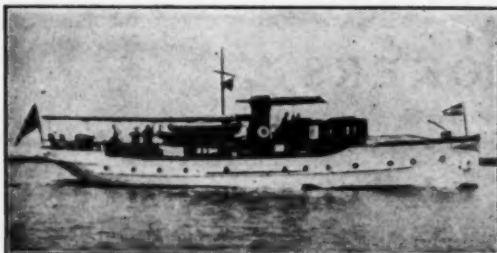
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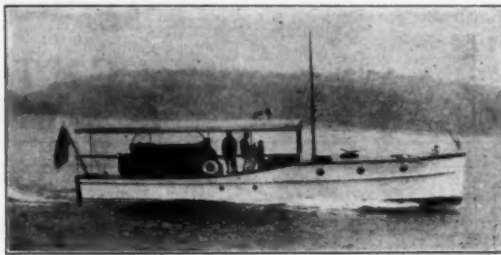
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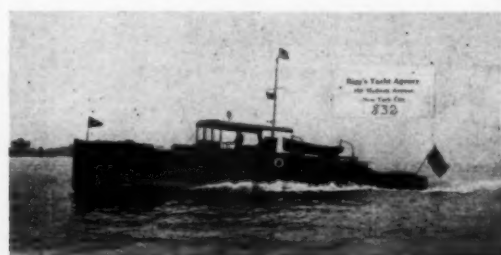
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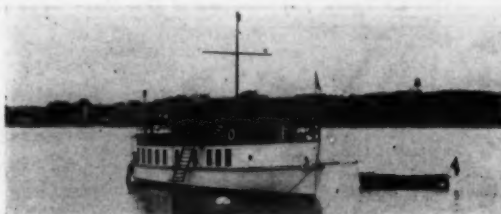
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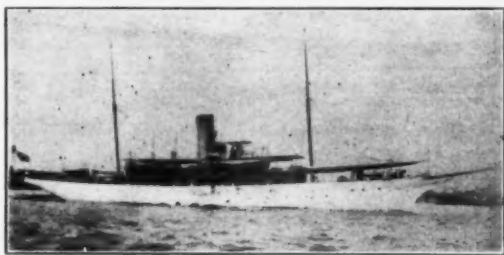
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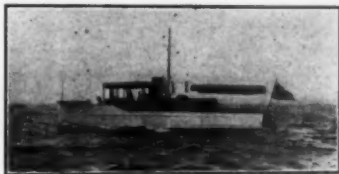
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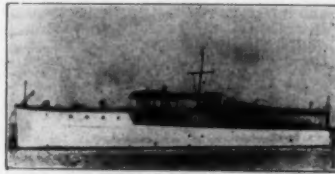
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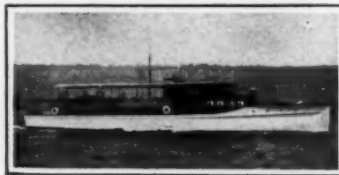
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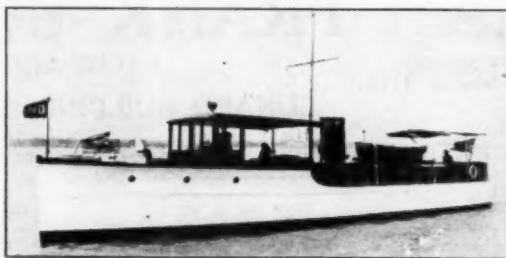
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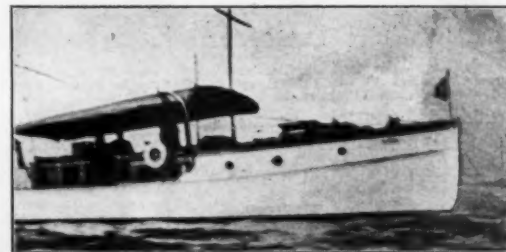
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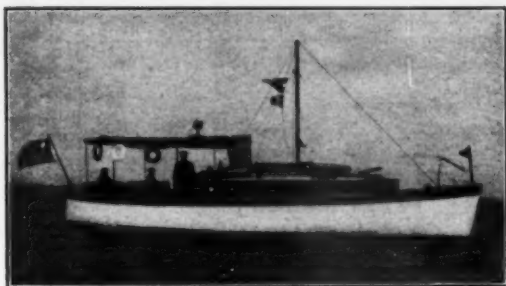
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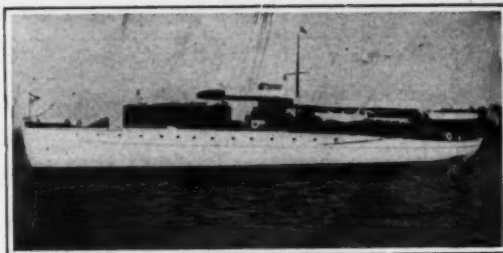
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Thirty foot motor boat, 35 H.P., 4 cylinder Peerless motor. Speed 18 to 20 miles. Propeller and rudder of bronze. Sleep four. Electric lights, dynamo and switchboard, toilet and ice chest. Apply Chas. E. Archbald, 65 Mine St., New Brunswick, N. J.

FOR SALE—Universal 4 cycle, 4 cylinder, 12 H.P. motor, with self starter, battery, reverse gear, shaft; special Karge coupling, bronze wheel, ammeter and searchlight, all dependable and in finest condition. Name your price. Address George Balhe, 234 West Wayne St., Fort Wayne, Ind.

WANTED—Auxiliary Ketch yawl or schooner in good condition. 30' to 40' overall. Heavily built. Send pictures, plans and price. Harry Evans, P. O. Box 76, Puntarenas, Costa Rica.

BINOCULAR—\$5.00. Here is the ideal glass for the boatman. Binascope, 6 power binocular, only \$5.00; weight only 8 oz.; pocket size; 25 mm. objective; beautiful optical quality. Price complete with case, \$5.00, plus 25c tax and postage. Money back guarantee. Wollensak Optical Company, 5-7 Clinton Ave., North Rochester, N. Y.

FOR SALE—Fast bridge deck express cruiser, 35' x 8' 6". Speed 22 miles. Sterling motor. Boat and motor in perfect condition. Inquire G. Bailor, 573 Seventh Ave., Astoria, L. I.

WANTED—Two pair of cylinders for Sterling engine, D-4-25. 85 H.P. 5 1/4" bore, 8" stroke. W. L. Carberry, 110 Academy Ave., Providence, R. I.

A PAINTING OF YOUR BOAT—Experienced marine artist who lives on his boat during the summer solicits order for oil painting of your yacht or other marine subjects. Will go anywhere on Long Island Sound. Can submit samples of work. Inquire Box 77, MoToR Boating.

FOR SALE—One 4 cylinder, 6 x 8, 32-37 Standard heavy-duty marine engine. Complete with propeller, bronze shaft, Bosch high-tension magneto and separate jump spark battery system. Engine rebored and new clutch installed in 1921. Factory No. 992. Price \$1,100 f.o.b. Washington, D. C. One 50-54 heavy-duty Standard Marine engine, 6 cylinders, 6 x 8, completely rebuilt. (Make offer.) One 5 KW. Winton direct connected generating plant, either 65 volts or 110 volt, \$400.00 f.o.b. Washington, D. C. Two 24" x 14" Tobin bronze shafts, \$65.00 each f.o.b. Washington, D. C. One set galvanized marine lamps for 100' vessel, \$20.00. One 110 volt, 15 amp., single cylinder, direct connected, Carlisle Finch direct connected generating set, \$150.00 f.o.b. Washington, D. C. Percy M. Child, 1110 Fourteenth St., Washington, D. C.

22 ft. semi-speed, 15 m.p.h., 2 cyl. 2 cyc. 16 H.P. Gray reverse gear, dry, all equipment Phone Richmond Hill 8695.

For Sale—New and rebuilt marine engines. Write for list of bargains. Anderson Engine Co., 4032 No. Rockwell St., Chicago, Ill.

WANTED TO CHARTER—Vessel with sleeping and other suitable accommodations for 15 or more tourist passengers. For commercial touring in inland waterways. Maximum height above water surface, 15'; maximum draft, 6'. Give full particulars, including charter price. Box 76, MoToR Boating.

MoToR Boating's PRACTICAL HAND-BOOKS

Vol. 1—Practical Motor Boats and Their Equipment.

Shows the ideal boats for various kinds of service. Invaluable when picking out a boat or its equipment.

Vol. 2—Practical Motor Boat Building.

An authoritative guide for the amateur builder, including hull construction and various fittings.

Vol. 3—Practical Things Motor Boatmen Should Know.

A fund of valuable information such as one acquires in a lifetime of boating experience.

While the names of the different volumes are practically self explanatory, only an examination of the actual contents of these six books can show you what a complete store of valuable information they contain. You should have the whole set.

Price \$1.50 per Volume, or \$7.50 per Set of Six Volumes (over 1000 pages). (Foreign Postage \$1.50 extra per set)

Handsomely bound in cloth. Profusely illustrated and printed in clear type on fine paper.

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All about the marine motor; what it should be and what it should not be.

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Everything about running, repairing and improving the operation of your motor.

Vol. 6—Practical Suggestions for Handling, Fitting Out and Caring for the Boat.

Every motor boatman should own this book.

MoToR Boating

119 West 40th Street

New York, N. Y.

PERFORMANCE

W. L. MASTERS & CO.

Authorized Distributors in Chicago territory for Kermath, Stearns, Frisbie, Universal, Evinrude, Johnson, Joes Gears and Hyde Propellers

Masters Rebuilt engines will run and give service in exactly the same manner as any reputable new marine motor. When the name Masters is placed upon a rebuilt engine, you realize that a company with fifteen years of experience stands back of your purchase.

Write for latest bargain list

231 North State Street, Chicago, Ill.

THE MOTOR BOATING MARKET PLACE

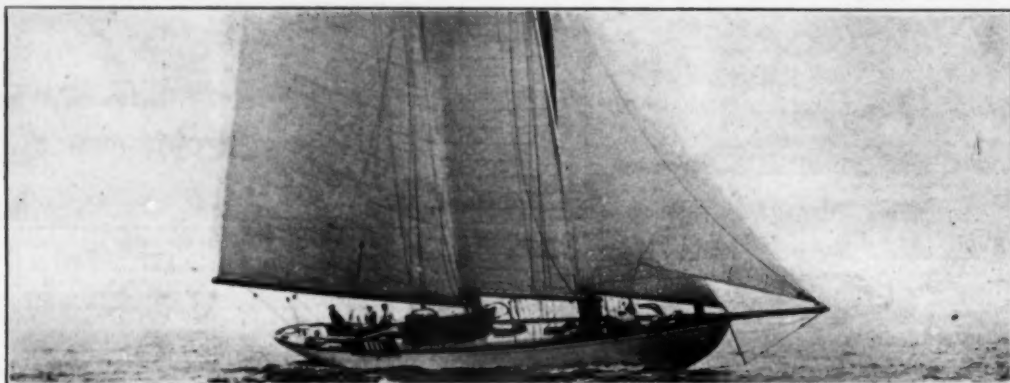
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Opportunities for the Motor Boatman

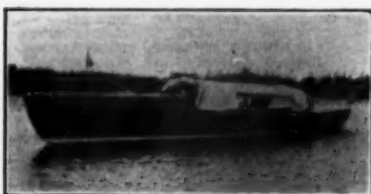
Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.



No. 9133—For Sale—Finest and most attractive off shore cruising auxiliary keel schooner, 67' 6" x 4' 6" x 15' 7" x 9' 6". Designed by us and built by Nevins in 1922, oak and yellow pine, with copper fastenings throughout. All interior finish of mahogany. Large double staterooms, two single staterooms, sleeping accommodations for eight people.

Power plant consists of Standard Motor, giving speed of about 8 knots. Yacht in full commission at Larchmont. Owner abroad unable to use yacht. Will sell subject to inspection for immediate delivery.

Prompt action required. Further particulars furnished upon application to Henry J. Glelow, Inc., 25 West 43rd Street, New York City.



No. 4319—For Sale—Express day cruiser, double planked mahogany hull built by Herrshoff. Speed up to 20 miles. Six cylinder Speedway motor. Exceptional electric equipment for lighting and cooking, also very large and comfortable cockpit. Inspectable New York. Apply Cox & Stevens, 25 Broadway, New York.

FOR SALE—Bridge deck cruiser, 43' x 11' x 3' 6". Latest type; all trim mahogany inside and out. 4 cylinder Palmer engine with self starter under bridge. Delco lighting plant. Very complete equipment, all in excellent shape. Bargain \$5500.00 net—no offers. R. W. Hanke, Bridgeport, Conn.

FOR SALE—Perfectly good Andrade Windlass double heads, handling rope and 1/2 inch chain on each end and 300 feet 1/4 inch chain. Have lengthened boat and replacing with 3/4 inch only reason for selling. Will accept reasonable price. Address F. L. Seely, Asheville, N. C.

FOR SALE—One 4 cyl. 6 3/4" x 8 1/4" 50 H.P. heavy duty 20th Century marine engine. 2 magnetos and battery ignition. Electric starter and generator. Practically new. Bargain. Witanen, 1 West 127th Street, New York City.

WANTED—Two boat engines, preferably six cylinder, about 75 H.P. at 1000 to 1200 R. P. M. Reverse gears not necessary. State full particulars, lowest cash price. Address "Speedboat," care MoToR Boating.

WANTED—Reduction gear on angle, similar cross gear about 300 H.P. Please state full particulars, lowest cash price. Address "Speedboat," care MoToR Boating.

FOR SALE—Schooner yacht, 158' overall, 28' beam, 18' draft. Built 1908. Perfect condition. Asking \$75,000.

Auxiliary schooner yacht, 75' overall, 15' beam, 10' draft. Asking \$10,000.

Auxiliary schooner yacht, 58' overall, 12' beam, 5' draft. Price \$6,000.

Schooner yacht, 53' overall, 14' beam, 8' draft. Price \$5,000.

Modern 96' twin screw motor yacht. Winston engines. Built 1921. Price \$65,000.

Express cruisers, 54', \$20,000; 50', \$12,000; 48', \$10,000.

Harry L. Becker, 185 Pine St., Providence, R. I.

FOR SALE—Universal 4 cycle, 4 cylinder, 12 H.P. motor, with self starter, battery reverse gear, coil; special Karge coupling, bronze wheel, ammeter and searchlight, all dependable and in finest condition. Name your price. Address George Balke, 234 West Wayne St., Fort Wayne, Ind.

1 cyl. 2 cycle	
4 H.P. Gray	\$45.00
5 H.P. Havannah	35.00
6 H.P. Acme	65.00

2 cyl. 2 cycle	
6 H.P. Gray	\$75.00
12 H.P. Ferro	115.00
14 H.P. Gray	105.00
15 H.P. Ferro	120.00
18 H.P. Kahlenberg, 7 x 7	415.00

15 H.P. Roberts, 3 cyl.	\$115.00
35 H.P. Vim, 3 cyl.	235.00
6 cyl. Roberts, 4 x 5	225.00

4 cyl. 4 cycle	
12 H.P. Universal unit plant	\$235.00
12 H.P. Continental, 2 1/2 x 4	65.00
20 H.P. Doman, 4 x 5	335.00
30 H.P. Erd, 4 x 6	215.00
30 H.P. Erd, 4 x 6, new	275.00
45 H.P. Holmes, 4 5/16 x 6 1/4, 6 cyl. and gear unit plant	425.00
50 H.P. Wisconsin, 5 1/4 x 7	285.00
125 H.P. Standard, 6 cyl, 8 1/2 x 11	1175.00
And others.	

THE BADGER MOTOR COMPANY
Milwaukee, Wisconsin

Advertising Index will be found on page 126

FOR SALE—New cabin launch, 29' overall, 6 1/4' beam, oak frame and planking. Cabin 11' long. Two berths. Standard engine. Speed 25 miles. R. F. Brackett, Warren, Maine.

WANTED—A used Elco cruiserette. Please state when built, size, and make of engine. Condition of hull and engine. H. D. Rogers, Boone P. O., Maryland.

BRIDGE DECK CRUISER—60' Standard engine. All in good condition. Price \$6000. Make offer.

One of the best 50' bridge deck cruisers available. Sterling engine. Now in commission. Price reasonable.

TRUNK CABIN CRUISER—50'. Strongly built and in A1 condition. Pay & Bowen engine. New 1922. Cheap.

RAISED DECK CRUISER—33' Sterling engine. An excellent cruiser which owner is anxious to sell. Chance for a bargain.

SOUTHERN YACHT AGENCY
American Building, Baltimore, Md.

For Sale—Speedway engine, 6 cyl. 140 H.P. 8 1/4" bore, 10" stroke, excellent condition. Address, H. Chrystal Iron Works, 98 VanDyke St., Brooklyn, N. Y.

Sloop, 45' x 10' x 35' x 4' 6". 60 H. P. heavy duty motor. Fully equipped. Bargain. Owner leaving states. For information address MoToR Boating, Box 75.

Will sell at a reduced price a pair of 10x imported Bush prism binoculars. These glasses are brand new and have been selected from stock by optical experts. Complete with black leather case. F. W. Horenburger, 4263 Byron Ave., Bronx, New York.

TRIMOUNT
WHISTLE BLOWER
OUTFITS

Friction contact with engine flywheel.
3 sizes.

TRIMOUNT
ROTARY HAND
BILGE PUMPS
All bronze composition. Suction lift 6 to 20 feet.
3 sizes.

A tremendous success—a high-speed, bronze Power Pump for \$15.00

TRIMOUNT ROTARY POWER CO.
294 Whiting Ave., East Dedham, Mass.



Anna D—54-Foot Express Cruiser

A NNA D is one of the famous Great Lakes 54 foot Express Cruisers of recent production and has just been commissioned and repowered. One of the finest, fastest and most powerful boats of its type on the market; in the very best of condition throughout and a real bargain in every sense.

Length, 54 ft.; beam, 11 ft.; draft, 3 ft. 6 in.

Cruising speed, 20 to 30 miles per hour. Maximum speed, 35 to 37 miles per hour.

POWER PLANT

New twin screw installation just completed consists of two 400 H. P. 12-cylinder Liberty Motors which are known to be the most efficient high speed motors ever designed, and ideal for an express cruiser of this character. Built to run at full speed all day long and exceptionally economical when cruising at 20 to 22 miles per hour. Electric starters and Delco ignition. 32 volt Lalley Electric Lighting Plant with storage batteries provides ample current for lights and electric range.

ACCOMMODATIONS

Crew's quarters forward with berths for four and separate toilet. Complete galley in forward cabin with electric range, fireless cooker and built-in ice box. Engine room under bridge. Dining saloon in forward end of aft cabin, immediately back of bridge. Owner's stateroom aft with berths for four, toilet and lavatory.

ONE MAN CONTROL

All controls are handled by the navigator from the protected bridge deck. This boat is easily operated by a crew of two.

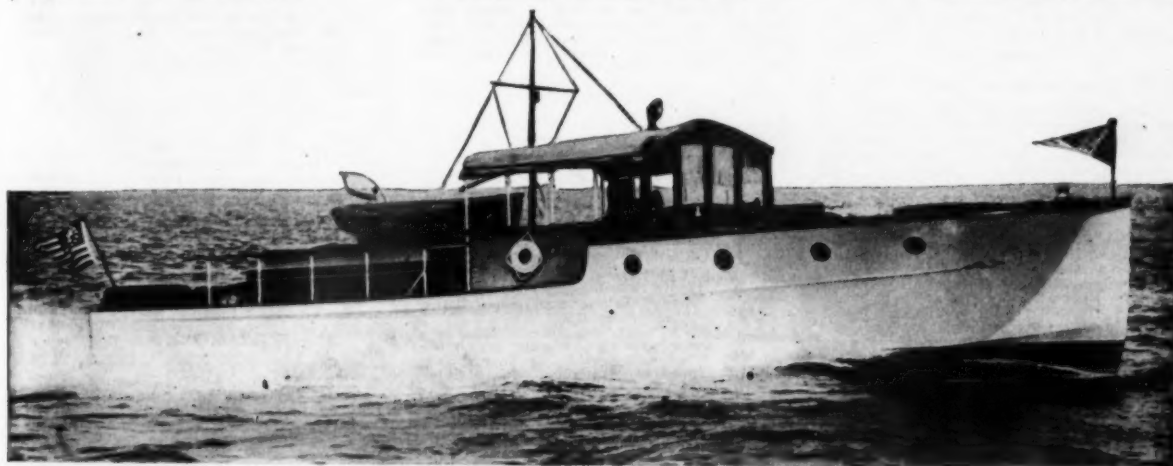
Anna D is everything that an express cruiser of her size should be. Complete in equipment and accommodations, staunch and seaworthy, roomy and comfortable, beautifully finished and in the pink of condition. Now in commission and ready for extended cruising. May be inspected by appointment in New York waters.

Inquire from your own broker, or by letter or wire to

Horace E. Dodge

2670 Atwater Street

Detroit, Mich.



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Opportunities for the Motor Boatman

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FOR SALE—WORLD'S CHAMPION SINGLE-ENGINE HYDROPLANE—"BABY SURE CURE"—Holds world's record of 64.8 m.p.h. for fastest lap in 2¼ mile course made at Chicago Regatta, 1922. Also holds world's 20 mile record. Will positively do 70 m.p.h. Perfect condition and ready to ship. Complete in every detail with splendid 450 H.P. high compression Liberty motor, equipped with special Dowmetal pistons; balanced flywheel; efficient self-starter; new cross water cooled gear box; Sprung clutch; automatic air pump; all couplings and bearings. Will sell for \$1,000.00 less than the cost of the power plant. \$3,400.00 F.O.B. DETROIT. PAUL STRASBURG, 51 Sprout St., Detroit, Mich.



"NEPENTHE II"

Just completed, a 4,000 mile cruise from Barnegat to the Orinoco. Smallest motor boat ever thru the West Indies.

For sale at a sacrifice. Owner building larger boat. Van Campen Heilner's well-known cruiser.

Eight months old. Two 6 cylinder Scripps. Speed 13 knots. Two cabins, two toilets. Delco plant. Ice machine, fish well, launch, Sponson canoe, 5 burner "Red Star" stove, 2 extra wheels, extra shaft.

Length 47', beam 10' 3", depth 3'. Designed for shallow water and tropical cruising, but can stand the gaff, as has been proved. In A1 condition.

Can be seen at and particulars obtained from

ELCO WORKS

Avenue A and North St., Bayonne, N. J.
Bayonne 470

Cruiser trunk cabin, 48' x 9', modern complete outfit. Palmer 4 cylinder, 4 cycle engine, new. Three cabins, five beds, etc. One man control. Sacrifice \$3600.00. Particulars and photograph on request. O. Rieger, 521 West 151st St., New York City.

FOR SALE—40' x 9' 6" x 3' 6" cruiser. Oak keel and frame. 1½" white cedar planking, pine decks. Speed 12 miles. 50 H.P. Sterling engine. Tanks, 100 gallons gasoline. 75 water. In commission and excellent condition. Price \$4500. Address Johnson, Room 202, 30 East Forty-second St., New York.

Cruiser houseboat, 38' x 12' x 3'. Jacob built 1917. Speedway motor. Cruised to Florida. Complete equipment. Competent crew. Sale. Charter. Shipshape, care MoToR Boating.



30' x 9' hand design 1920 cruiser, with new 125 H.P. Peerless motor. Speed 18-20 M.P.H. Fully sound. Box 70, MoToR Boating.

Free Illustrated Literatures, New Rebuilt Engines, Outboards, Clutches, Gears, Joints, Pumps, Hyde Propellers, Stoves, Cruisers, Runabouts, Canoes, Camping Outfits. Canadian Boat & Engine Exchange, Toronto.

For Sale—50' x 14' 6". Harbor tug or Supply boat. With two cylinder 45 H.P. Gulowser Grel-Crude-oil engine. Joes clutch and electric starting device. Separate engine with air compressor, boat fully equipped and ready for work, boat, engine and equipment new—1921. Will sell for one-half of actual cost. Also one large size pentwater lifter, with twin oscillating cylinders for steam—Kriebel make, used only one season. Frank J. Albright Company, La Pointe, Wisconsin.



Wanted

CRUISER, 100 FT. OR LESS. Capable of going around the world.

Engines no consideration. Will replace with two Diesels anyway. State length, draft, beam, whose design, where and when built. Photo if possible.

—OR—
Approximate estimate for building hull—owner to furnish engines and fittings. Plain finish mahogany trim preferred.

VAN CAMPEN HEILNER
Spring Lake Beach
New Jersey

Advertising Index will be found on page 126



Raised deck cruiser for sale. 36' x 9' x 3'. Double cabins, separate toilet and galley. Mahogany finish throughout. Electric lights, running water, etc., and a full equipment and tender. 30 H.P. Frisbie engine, nearly new. Speed 9-10 miles. Three gasoline tanks, giving cruising radius of 500 miles. Will deliver Boston or New York. Price \$2500.00. Well worth it. Robert C. Carr, Box 227, Providence, R. I.

SEA-SLED, mahogany, double cockpit type, Sturtevant motor, twin screw. 28 M.P.H. \$1,000. Box No. 73, MoToR Boating.

FOR SALE

Launch, length 33', 24 H.P. Palmer N. R. 4 engine. First-class condition. Two years old. Can be seen at Isaac Smith's Shop, Port Washington, Long Island, N. Y.

FOR SALE—25' x 5', open mahogany trim and decks, semi-speed boat. 28-30 Red Wing motor. Speed 16 miles. Three-year-old engine and hull. Driven less than three hundred miles. Price \$700. Wm. N. Butler, 57 Pratt St., Hartford, Conn.

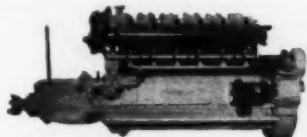
1—Model "B" Red Wing, complete with electric starting system, new \$700.00
1—8 cyl. Model "C" Van Blerck, complete with many extra parts..... 450.00
1—4 cyl. 4 cycle, 22 H.P. Gray, complete 500.00

RED BANK YACHT WORKS
Red Bank, N. J.

Who will give a 55-year-old, able-bodied ex-service man, a job, not a position, as caretaker or handy man on his boat? Salary no object. Gilt edged reference regarding character. Address MoToR Boating, Box 74.

FOR SALE—Runabout in commission, 25'. Perfect condition. Four cylinder Wisconsin. Mahogany finish, electric lights and starter, new battery and top. Complete equipment. John F. Collins, Bayside, Long Island.

No IFS ANDS or BUTS



6 Cyl. Hall-Scott Marine Engine

If you are in the market for a new engine you can't find a better selection than the following makes for which we are authorized agents:

Niagara
Hall-Scott
Automatic
Brennan Standard
Wright Reliable
Nelsco Diesel
Scripps
Gray
Paragon Gears
Schebler Carburetors
Hyde & Sterling
Propellers
Universal 2 & 4 K.W.
Electric Plants

WE all know the fellow who loses a race and offers a hundred and one excuses for letting the other boat win. It is exactly the same brand of sportsmanship when a dealer sells an engine without assuming full responsibility for its performance.

When we sell you a marine engine, whether new or rebuilt, there are no IFS, ANDS or BUTS to our guarantee. For our part, we would rather lose the profit on a sale than have a dissatisfied customer.

But think what it means to you as a buyer! You can rest assured that you will get a good serviceable engine, properly suited to your boat and worth every cent you paid for it.

You are certain that it has passed the approval of our own marine engine inspectors. Their job is to protect us in sending out only those engines we can safely back with our kind of a guarantee. If our inspectors make a mistake, it is our loss—not yours.

Can you afford to buy any engine without a responsible guarantee?

REFUND BOND GUARANTEE

*That this motor
has been rebuilt
from spark-plug
to base*

MARINE ENGINE CO.
OF PHILADELPHIA

*This seal is attached to every
rebuilt engine we sell*

Write today for our latest RED BOOK of Guaranteed Rebuilt Engines. It covers a complete variety of size, type and make. We will make you a fair allowance for your old engine on either a new or rebuilt engine.

*My word
is good*
D. C. MacNeill
President and Treasurer

FOREIGN BUYERS

If you are in a hurry for a marine engine and wish to save the delay of writing for catalog, prices, etc., you are perfectly safe in sending us a deposit with instructions to ship a suitable motor at once. Simply write us in detail about your boat and the service you need; state approximate h.p. and speed desired, price you wish to pay, shipping directions and method of collection on balance due. Our Export Service Department will pick out a motor for you and ship it by the first steamer. You will receive the same honest service and guarantee as our local and domestic customers.

MARINE ENGINE CO.

MACHINERY EXHIBIT
BOURSE BUILDING

of PHILADELPHIA

President—D. C. MacNeill
Secretary—H. B. Foster
Treasurer—D. C. MacNeill

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Thomas D. Bowes, M. E.

NAVAL ARCHITECT AND ENGINEER

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PHILADELPHIA, PA.

COX & STEVENS

Naval Architects and Engineers
Yacht Brokers

25 Broadway, Cunard Building
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B. T. DOBSON
NEW BEDFORD, MASS.

Naval Architect, Yacht Broker
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Auxiliaries, and Power Yachts.

E. LOCKWOOD HAGGAS

Naval Architect and Engineer

Designs for Yachts, Motor Boats and
Commercial Vessels

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14 S. Wissahickon Ave., Atlantic City, N. J.

William H. Hand, Jr.

NAVAL ARCHITECT

NEW BEDFORD, MASS.

HAND-V-BOTTOM DESIGNS

Every design, now as always, my personal
work.
Send stamp for catalog illustrating forty-three
typical Hand-V-Bottom designs.

WALTER COOK KEENAN

NAVAL ARCHITECT

602 Liverpool & London & Globe
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Sail and power yachts. Houseboats and
commercial vessels. Surveys made in all
Gulf Ports.
Specialist in shallow draft vessel for
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CHARLES D. MOWER

Designer of

SENSIBLE CRUISERS

POWER—SAIL—AUXILIARY

Twenty-five years' practical experience
350 Madison Avenue - New York City

FREDERIC S. NOCK

NAVAL ARCHITECT

Yacht Builder, Marine Railways,
Storage and Repairs

East Greenwich, Rhode Island, U. S. A.

Repairing a Broken Plank

(Continued from page 40)

I have had good opportunity to observe this condition on an old cat boat. As the boat would roll the top of the center board trunk would move from side to side about an inch in relation to the deck, indicating that the hull twisted with the roll. Also when sailing the canvas on the cabin top would wrinkle more or less, depending on the amount of strain on the hull.

As a good part of the strength or stiffness of a boat is in the planking it is a simple matter to appreciate the advantage of long planking and few butts.

Now when repairing a broken plank or a number of planks, avoid short patches for the sake of both strength and appearance. Fig. 1.

In removing a broken plank, if possible, save it so as to use it as a pattern for the new one. Clean out the seams; with a hammer and chisel cut the wood away around and under the head of all fastenings; pull each fastening out or cut off the heads so as to remove the plank in one piece. If the piece is destroyed and if there is considerable twist or bend in the hull at that point it may be necessary to make a template or pattern of some thin material, say 1/4-inch white pine.

Bend the new piece or template on the hull with one edge of the piece next to the good remaining plank (Fig. 2); with a compass or dividers set a space equal to the widest space between; scribe off this distance at about foot intervals; mark a line on it, with a thin batten; rip it through; see how it fits; plane it for better fitting and put on the proper bevel.

Now measure at intervals the width of the opening (Fig. 3); mark off on plank at corresponding intervals; rip off and plane proper bevel.

On the seams leave an open joint on the outside so as to take the caulking as indicated. Fig. 4.

In putting on a new garboard it is sometimes more efficient to remove the next plank making it easier scribing and getting it in place.

Be sure to bore all nail holes so as not to split the plank. First bore for the plug and then for the nail.

For fastenings use galvanized iron nails or screws with wood plugs set in white-lead or spar varnish. It probably would be impractical to use copper rivets on account of the inside finish as mentioned above.

After the planks are secured plane off smooth, plus and caulk.

If the bend is very severe such as on a compromise stern, it may be necessary to steam that part of the plank. Soaking in hot water will also help soften a plank for bending.

A. G. W., College Point, N. Y.

Safe Methods for Carrying Extra Fuel

(Continued from page 41)

permanently installed, are best for the larger cruisers. Auxiliary tanks, permanently installed and feeding by pressure, are the best for medium size cruisers, while the can or case system, either stowing away below decks or in an emergency locker in the cockpit, is the best for the little fellows.

V. L. S., Wilmington, Del.

Advertising Index will be found on page 126

RIGGS YACHT AGENCY

350 Madison Avenue

(at 48th)

NEW YORK CITY

Telephone
Vanderbilt 0596

Cable address
"RIGGING"

JOHN H. WELLS

NAVAL ARCHITECT

23 Years' Experience

Brokerage Supervision Stock Boats

Telephone; Vanderbilt 3414, 3415

347 MADISON AVE., NEW YORK

Carrying Extra Fuel

IT is often desirable to carry an extra supply of fuel for long distance cruising or racing especially when the course lies off shore. There is a feeling of security in knowing that you have enough fuel aboard to complete the trip even if several hours extra running are necessary, but many a boat goes out with barely enough fuel to return on because there is no provision made for carrying a reserve, and gasoline in cans is bothersome to have around.

The most satisfactory and safest way to carry extra fuel is in light cylindrical tanks which may be temporarily strapped on deck in the case of a trunk cabin boat having an offset at the sheer line upon which the tanks may rest. In this installation any leakage would flow directly overboard.

On a raised deck cruiser it is advisable to place the tanks inside the cabin by hanging them from the deck carlins on metal straps or wooden chocks. They should be made tight so that no leakage will occur.

The above described installation provides for a convenient storage of reserve fuel with the tanks always in sight, well ventilated, accessible and guarded against leakage. With the tanks properly supported they are relieved of all strain, therefore much lighter temporary tanks may be used.

When the above plan is not feasible a single tank may be placed crosswise in the cockpit, so installed that it rests on wooden chocks and is held by iron straps having a nut under the floor beams or the chock frame. A light wooden covering may be provided for protection, or a seat, but don't forget the drip pan and drain. Carrying gasoline in tin cans is not recommended where it is possible to use regular tanks. The cans are thin and easily damaged and if upset or much shaken up are apt to spill as the caps are seldom tight. If you must use cans get good ones and provide screw caps setting on a leather or cork gasket, and make a wooden frame to support and protect them.

The best way is to pipe up the reserve tanks so as to feed directly into the main tank but the gasoline can be siphoned or pumped out and poured into the main tank if you don't mind the risk and the bother. By soldering or tapping two nipples into the filler cap and attaching a pipe reaching to the bottom to one nipple and a tire pump to the other the gasoline can be delivered through a hose by air pressure without danger.

When handling gasoline let Safety First, be your motto and don't smoke or use a lighted match to see inside the tanks. It has been done with disastrous results. Keep open flames away.

W. B. M., Newburgh, N. Y.

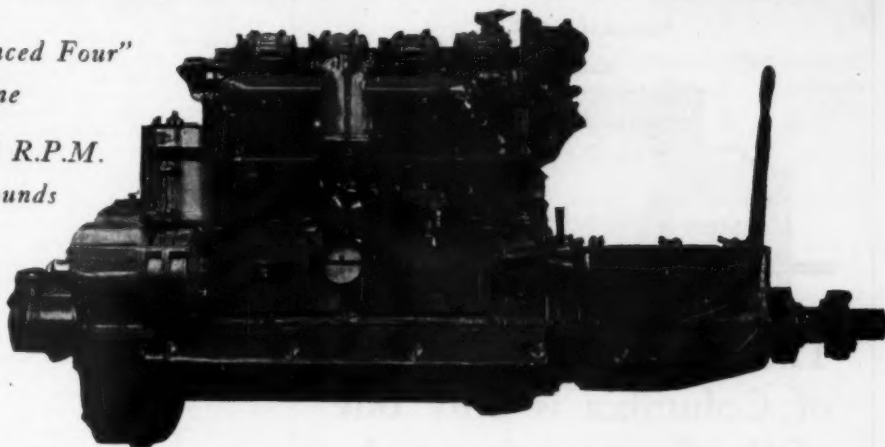
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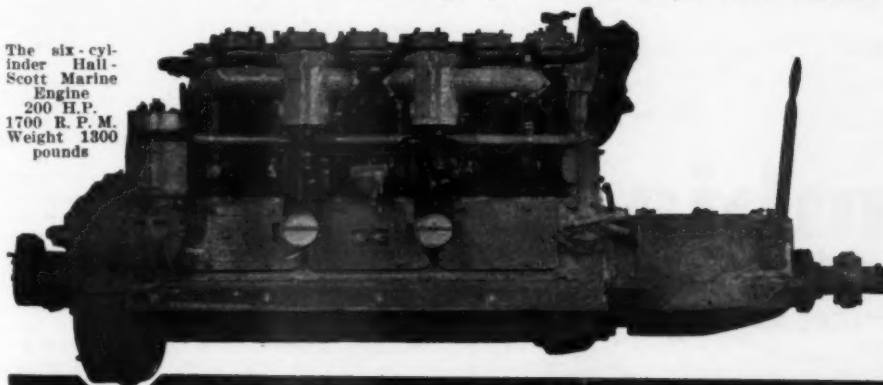
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Memory and Seafarer First to Bermuda

(Continued from page 23)

line outside of New London Harbor on the morning of June 12. At the time of the start, it was announced that the boats were divided into two regular classes and two special classes. Class A was for cruising boats of 35 to 52 feet in length; Class B for those yachts 53 to 70 feet over all length. In addition to these, there was a special class for Ladona, owned by Homer Loring, and Isabel Q, owned by Francis Minot, which boats did not meet the requirements of either Class A or Class B. There was also a special match race arranged between Flying Cloud, owned by F. D. Draper, and Memory, owned by R. N. Bavier, which boats also it was announced, previous to the start, did not qualify under the regulations governing the regular classes. However, no special announcement was made by the committee previous to the start as to whether Flying Cloud and Memory would be permitted to compete in Class B due to the fact that she is one of the original New York Yacht Club 40-foot racing boats, rigged as a yawl for the purpose of this race. Therefore, if Memory is not permitted to race in Class B, Seafarer will be declared the winner in this class, with Malabar IV first in Class A, and Memory the winner of the special match with Flying Cloud.

The race to Bermuda was originally suggested by members of the Cruising Club of America, although this organization refused to officially sanction the event. The race was announced as open to legitimate cruising craft only and here again this unfortunate and overworked term, cruiser, has led to considerable difference of opinion. There are many yachtsmen who believe that the proof of the pudding should be in the eating, and now declare that because Memory was able to reach Bermuda safely and readily, the fact is established that she is a legitimate cruiser. However, it was not long ago that a mite of a canoe, with two on board, reached New York safely after an outside passage up the Coast from New Orleans.

There is no doubt but that Memory is a safe and sane cruiser. The New York Yacht Club Forties have demonstrated time and time again that they are good sailers in all kinds of weather no matter if it be fair or foul. The owner of Memory purchased his craft last fall and entered her in the Bermuda race many months ago. Memory's old racing rig as a sloop was taken off and the boat was rigged as a yawl and otherwise rebuilt and strengthened, particularly for this race. However, she was not the same type as far as construction, as Seafarer, which finished second, and most of the other boats which took part. Therefore, it was but natural that under the conditions encountered, Memory should finish first. Whether the spirit of the rules has been violated by Memory's entry is still a question.

The boats were handicapped on the basis of their overall length. They received one hour's handicap for each foot of overall length that they were shorter than the longest boat. Seafarer, being approximately 62 feet in length and the longest boat in the race, had to allow Memory 6 hours, 27 minutes, although this boat reached the finish line several hours ahead of the scratch boat, making her the winner on corrected time, by nearly half a day. Evidently, the custom of handicapping sailing craft on the basis of overall length only, is not a fair one when two boats of the types of Memory and Seafarer are obliged to compete in the same class. This method of handicapping does not take into consideration at all the type of underbody, the boats' displacement, or their sail area which are very material factors when boats of different types, size and sail area are obliged to compete together.

The race at the American end was handled by the Race Committee of the New Rochelle Yacht Club, assisted by E. H. Tucker, E. W. King, and Charles D. Mower. This Committee was very much on the job at the start and saw to it that all details in connection with the race were properly handled and taken care of, previous to the start.

Several hours after Malabar IV finished, seven other yachts came in within one and a half hours. Three of these, Baghera, owned by Carroll Brown; Black Hawk, owned by W. H. Hand, Jr., and Sunbeam, belonging to S. V. Baker, finished within fifty seconds of each other. It is said there never has been such a close finish in an ocean race.

The skippers report having experienced all kinds of weather during the race. Several of the boats were badly beaten about while in the Gulf Stream on the first night out. Memory hove to all night and most of the other boats were under shortened sails during the first part of the race. Malabar, carrying two reefs, bucked the sea, making 204 miles in twenty-four hours. This is declared by yachtsmen to be the fastest time a 36-foot water line vessel has ever made at sea. There were no mishaps.

A remarkable feature of the race is that the smaller boats finished so close up with the larger ones. In the larger divi-

(Continued on page 62)



— and when the Sun sets behind the Pines —

—after the kit is cleaned up and the tent made snug for the night—then get the songs, the talks, the music of half the Continent through your De Forest Reflex Radiophone Receiver. It has been easy to take along—because it takes up no more room than a starch box. If it's D-10, its dry cells are tucked away in the cabinet. No ground—no antenna—no cumbersome storage battery. A twenty pound handful complete with dry cells, tubes and collapsible loop. Reception range? Probably

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Memory and Seafarer First to Bermuda

(Continued from page 60)

sion Memory won, with Flying Cloud second, Seafarer third and Sunbeam fourth.

In the smaller division Malabar IV. won first place over Dainty, belonging to Alfred E. Darrell. Dainty was a Bermuda entry. Malabar won by 47 minutes corrected time, Dainty getting second prize. Malabar also won the cup for the best corrected time for all classes.

In the special schooner class Ladona won over Isabel Q. while in the special sloop and yawl class the yawl Memory beat Flying Cloud.

The elapsed time of the winner of the race was 112 hours 18 minutes. The order of the finish follows:

Class B—Memory, schooner Flying Cloud, Seafarer, Sunbeam, Caroline, Black Hawk, Baghera, Whistler, Ariel, Lloyd W. Berry and Hilda.

Class A—Malabar IV., time 115 hours 31 minutes; Dainty, Sea Call, Demarie, Mary Ann, Surprise, Wanderer and Gauntlet.

Sloops—Memory, first, and Flying Cloud, second.

Special Schooner Class—Ladona.

As mentioned above, the fleet was divided into two main divisions. In Class B, for those yachts 53 to 70 feet length overall, were S. B. Coffin's Seafarer, scratch; Francis Minot's Isabel Q. allowed 18 minutes; James G. Hinkle's Lloyd W. Berry, allowed 2 hours; W. H. Hand, Jr.'s Black Hawk, allowed 3 hours 9 minutes; Carroll Brown's Bagheera, allowed 3 hours 9 minutes; S. H. Baker's Sunbeam, allowed 4 hours 30 minutes; Edward Brayton's Whistler, allowed 6 hours; R. N. Bavier's Memory, allowed 6 hours 27 minutes; Lawrence Grinnell's Flying Cloud, allowed 9 hours 48 minutes; J. S. and R. W. Johnson's Ariel, allowed 11 hours 42 minutes, and W. R. Palmer's Hilda, allowed 12 hours 39 minutes.

In Class A, 35 to 52 feet, were A. E. Dingle's Gauntlet, scratch; J. G. Alden's Malabar IV, allowed 30 minutes; M. S. Kattenhorn's Surprise, allowed 3 hours 30 minutes; John Parkinson's Mary Ann, allowed 6 hours 30 minutes; D. H. Atwater's Damaris, allowed 6 hours 30 minutes; Alfred E. Darrell's Dainty, allowed 10 hours 30 minutes; Dr. L. Neitsche's Sea Call, allowed 11 hours 19 minutes, and Henwood's Wanderer 11 hours 19 minutes. The schooner Ladona, owned by Homer Loring, sailed a match race with the Isabel Q, allowing that yacht 4 hours 15 minutes, and F. D. Draper with the yawl Flying Cloud sailed a match race with the Memory on even terms.

Memory was built by Herreshoff in 1916 and was originally known as Black Duck. She was one of the 40-footers and was built with the others of that class and raced the first season by Arthur K. Bourne. Last fall the yacht was purchased by Mr. Bavier, who planned to give it a cruising rig, and when the race to Bermuda was arranged he entered the yacht and had it rigged as a yawl, carrying a jibheaded mainsail and jibheaded mizzen. At the last moment Memory was protested on the ground that she was not a bona fide cruising yacht. The protest was not sustained and by finishing first and sailing successfully the 662 miles out on the ocean she has shown that she is a cruiser and that it is not necessary to make a boat of ugly model to have a cruiser. On board with Mr. Bavier were Robert Mahlstedt, Ed. Payne, A. W. Lockwood and S. Giffes. Mr. Bavier and Ed. Payne were the navigators.

Seafarer was the largest or rather the longest yacht in the class, for allowances were figured on overall length. She had to allow Memory 6 hours 27 minutes and she had to allow Hilda, the smallest yacht in Class B, 12 hours 39 minutes. On board Seafarer were Samuel B. Coffin, Hans Folkers, Alfred F. Loomis, Frederick Bradley, Jr., J. Linton Riggs, Donald Steele and two paid hands.

Malabar IV was the first yacht of the smaller division Class A to finish. She is a new schooner built this year for John G. Alden, who had charge of her. With him were Samuel Wetherill, Cyril H. Smith, Samuel H. Browne, Jr., William Parker and U. S. Pennington.

Gauntlet was scratch boat in this division and had to allow 30 minutes to Malabar IV, and the boat with the biggest allowance was Wanderer, 11 hours 19 minutes 12 seconds.

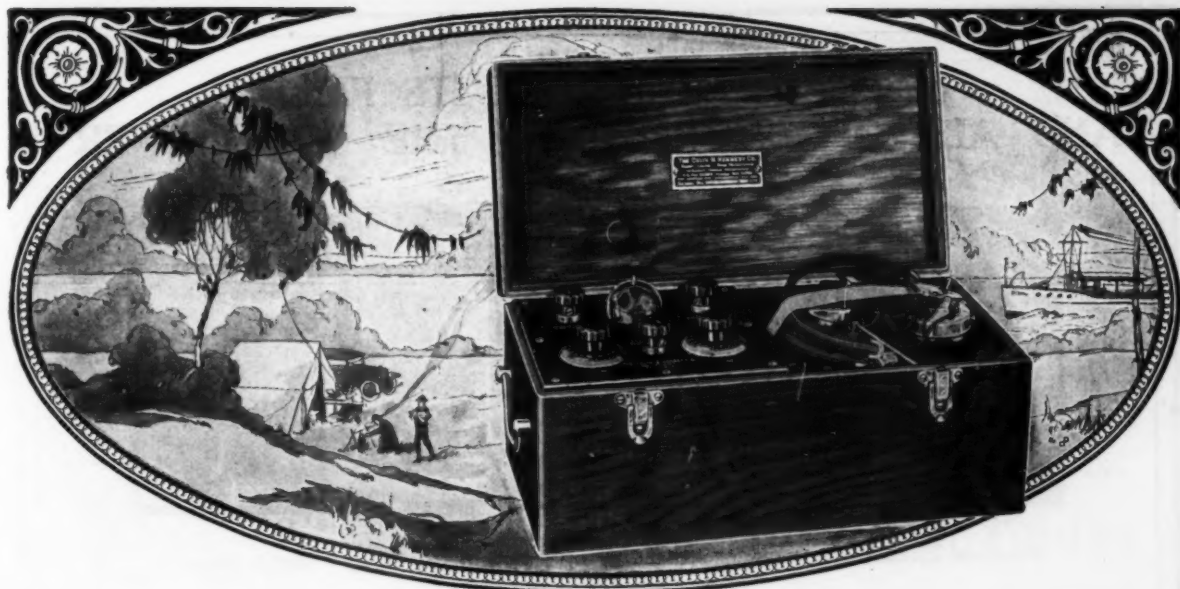
Ariel—J. S. Johnson, owner and master; R. W. Johnson, William Dorman and two paid hands.

Black Hawk—William H. Hand, Jr., owner and master; Frederick Slocum, navigator; U. J. Herrman, A. H. Seabury, C. O. Foster, Jerome Fraser.

Caroline—Roger Young, owner and master; Phil Gill, Will Gill, G. Denison, Com. E. H. Trimmingham, H. G. Butterfield, N. A. Bekatove.

Chaos—John S. Ball, owner and master; Adrian Marron, George A. Whiteley, John Adams Thomson, Frederick P. Ball, Damaris—David H. Atwater, owner and master; Gerald A. Cooper, James A. Blake, Elon Foster, John J. Atwater.

(Continued from page 66)



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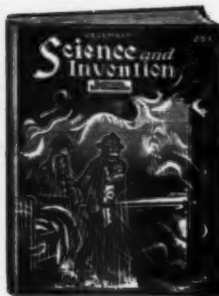
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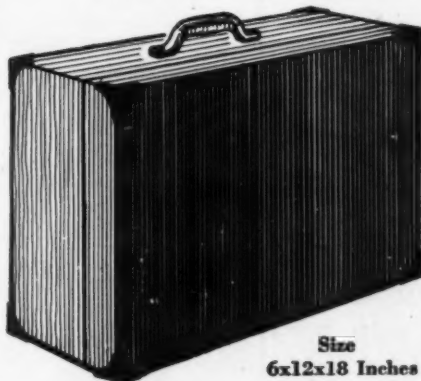
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Memory and Seafarer First to Bermuda

(Continued from page 62)

Flying Cloud (Schooner)—Lawrence Grinnell, owner and master; Francis H. Stone, Jr., Gordon Harrower, Nicholas S. Potter, William Almy, Jr., and one paid hand.

Flying Cloud (Sloop)—Frank B. Draper, owner and master; Arthur S. Hildebrand, Nelson Wolf, Aubrey D. Kelly, Gauntlet—A. E. Dingle, owner and master; M. S. Manning, J. Buckley, F. P. Lewis.

Hilda—William R. Palmer, owner; Edgar C. Palmer, Rodger Yeomans, Winton Smith, P. B. O'Sullivan.

Isabel Q—Francis Minot, owner and master; George O. Olsen, James J. Minot, Jr., John H. Cunningham, Jr., Rockwell A. Coffin, Hall Nichols, Harold F. Turne, W. A. Devine, Charles Fairweather.

L. W. Berry—Walter H. Hellier, owner and master; James E. Hinkle, W. S. Bailey, Stuart Elliott, Leslie Soule.

Ladona—Homer Loring, owner and master; R. S. Loring, Harold Peters, C. S. Jackson and three paid hands.

Malabar IV—John G. Alden, owner and master; Samuel Wetherill, Cyril H. Smith, Samuel H. Brown, Jr., William Parker, U. S. Pennington.

Mary Ann—John Parkinson, owner and master; F. A. Fenger, Gordon Prince, N. F. Emmons.

Seafarer—Samuel B. Coffin, owner and master; Hans Folkers, Alfred F. Loomis, Frederick Bradley, Jr., J. Linton Rigg, Donald Steele and two paid hands.

Sea Gull—Dr. L. Nietsch, owner and master; Dr. Edwin Pyle, Howard M. Smith, Jr., C. L. Moody.

Surprise—M. S. Kattenhorn, owner and master; S. Leroy Ackerby, B. J. Catrill, W. T. Haskell, S. C. Talbot, Walter Abel.

Wanderer—David D. Henwood, owner and master; Herbert B. Dykeman, H. N. Smith, Siegfried Hannah.

Whistler—Edward Brayton, master and owner; John B. Cummings, Philip T. Hawes, Ackley Shove, Almet F. Jenks, Jr., George W. Patterson IV., Osborn Shorer, one paid hand and one cook.

Sunbeam—S. D. Baker, owner and master; Herbert L. Stone, H. T. Patterson, Jerry Sommers, Alex Sommers, Nat Seeley, R. Frazier, Charles Atwater.

Dainty—Alfred A. Darrell, J. Darrell and three others.

Note: Alfred F. Loomis, of MOTOR BOATING, sailed on and acted as navigator of Seafarer. Mr. Loomis' complete story of the race to Bermuda will appear in the next issue of this magazine.—Editor.

News and Music by Radio

(Continued from page 34)

The new Grebe Broadcast Receiver operates without storage batteries and anyone, in a moment, may install this receiver aboard and tune in the desired program. It is a complete, self-contained receiver, in an attractive walnut cabinet with compartments for all necessary batteries.

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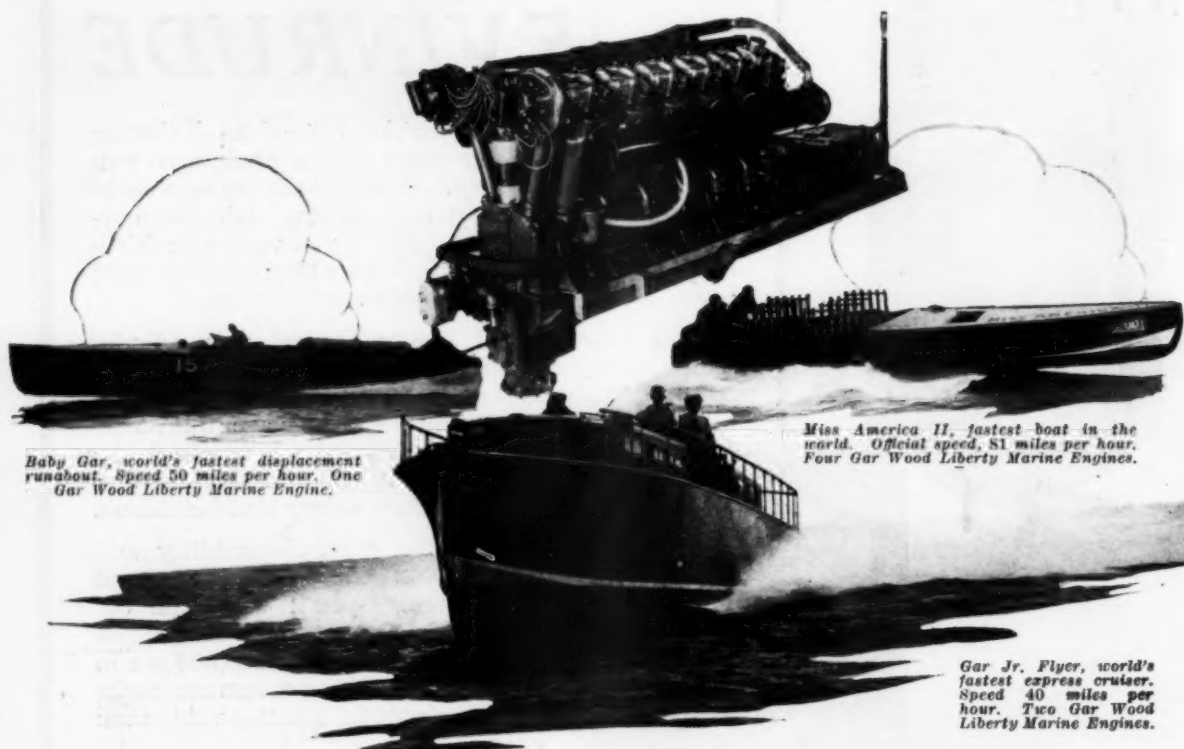
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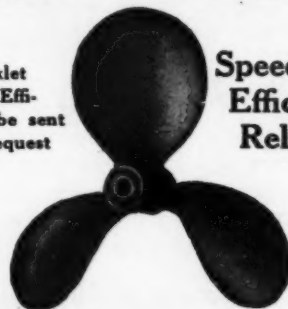
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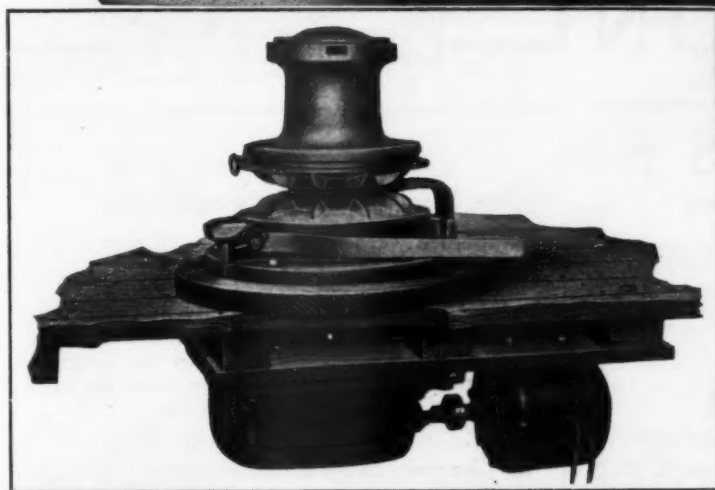
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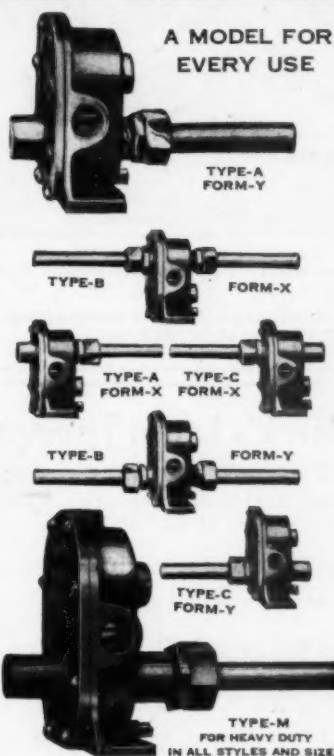
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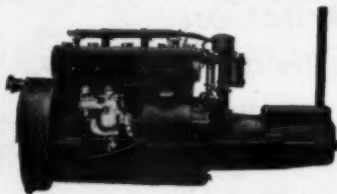
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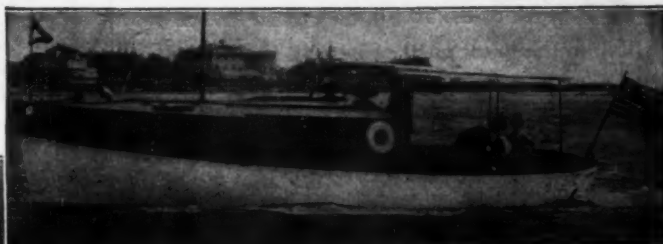
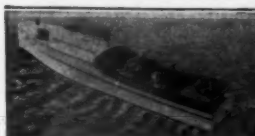
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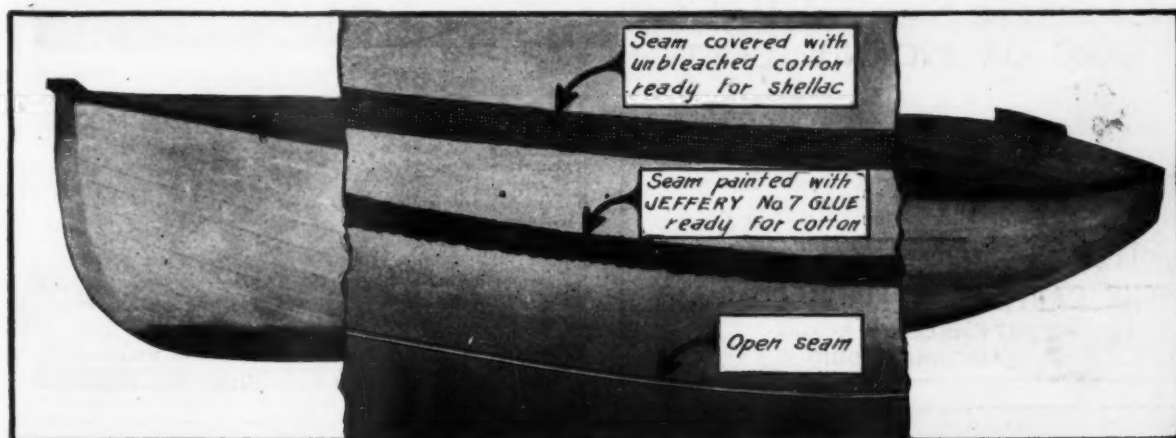
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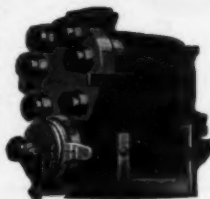
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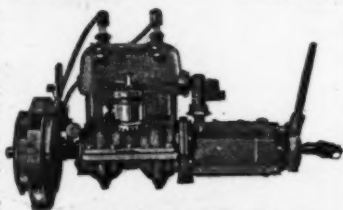
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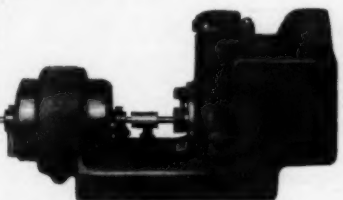
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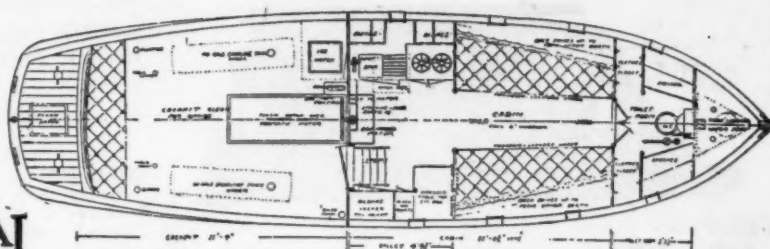
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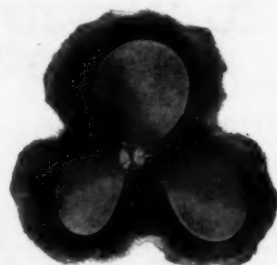
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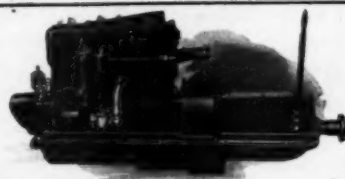


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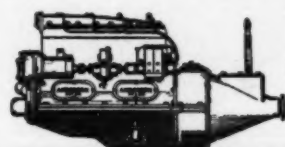
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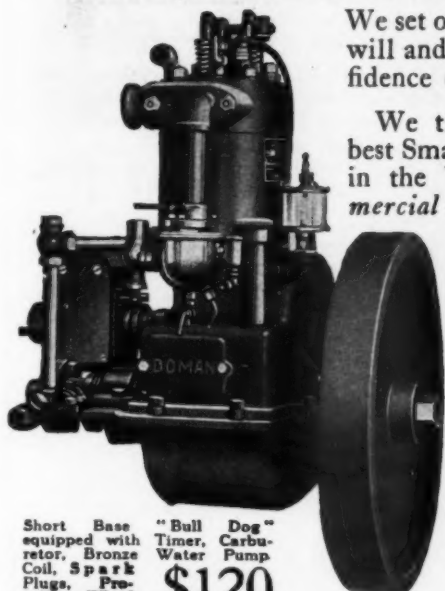
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Boatmen—Before you decide on your engine or before you replace the old one—get our bulletin—fortify yourself with all the facts—read about the exceptional success that scores of small coast vessels have had and are having with the DOMAN "Bull Dog"—and then make your decision.

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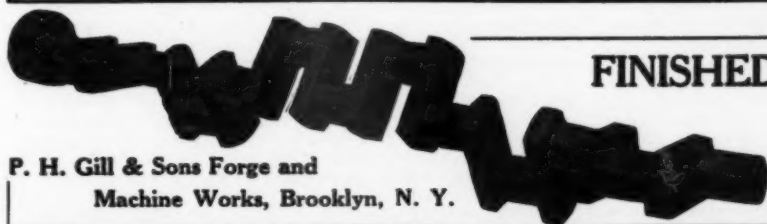
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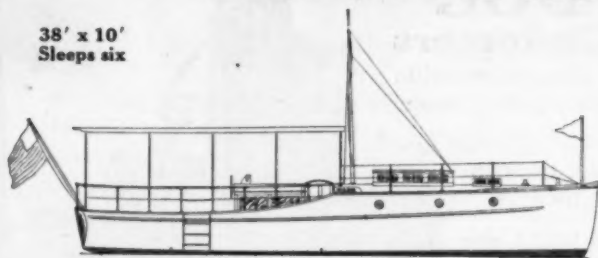
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No picture can do justice to the STANDARDETTE. We want you to come up to our plant at City Island and see it, ride in it and see duplicates under construction. Summer deliveries should be arranged immediately.

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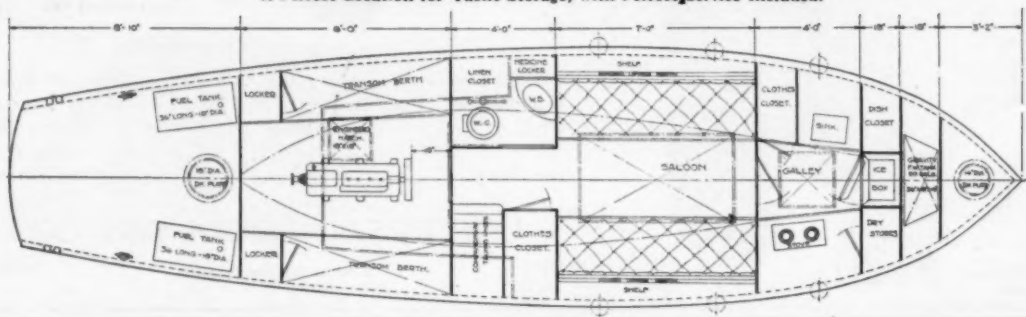
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STANDARDETTE

A big roomy cruiser that meets every requirement for the man who has graduated from the limitations of his first boat, or for the luckier fellow who picks a big enough boat the first time.

STANDARDETTE has everything you want in a cruiser. Well arranged, beautifully finished in French Gray and mahogany, completely equipped, it is a fine day boat and equally good for extended cruising.

Speed 12 miles with Kermath 35. Bosch electric starter, electric lights, electric windlass for hoisting anchor, etc.



Bear Cats for Comfort and Speed

(Continued from page 31)

Bay, we thought slickers might be necessary as protection against possible spray, but we found they were not needed. The trim of the Bear Cat was such that all water was thrown well to port and starboard without a drop coming aboard. This also held good when we reached the open Sound and headed due east, putting the wind almost on our beam which is generally the wettest position with most boats.

Those who are familiar with the distances along the Sound and especially those motorists who know each town and almost every hole in the road along the Connecticut shore, will appreciate what was happening when they learn that we were abeam of Stamford at four-forty and Bridgeport, usually four or more hours away from New York on any Sunday afternoon by motor car—could have been reached in an hour and twenty minutes had we chosen to put into this city instead of continuing straight on. A few minutes over two hours would have been our running time to New Haven and several minutes before half after six, we were tied up at the float of the Sachem's Head Yacht Club where we put in to see Commodore Cornell of the Middletown Yacht Club, who himself is one of those who has the vision to see possibilities of the high speed motor boat. The Commodore owns Harpoon, one of the fastest express cruisers of her type and we knew he would appreciate a sail in the Bear Cat. But the Commodore too was making miles that same afternoon, and after visiting nearly all the Sound's ports, had left for Middletown, so we missed him.

After putting on thirty gallons of gas at Sachem's Head, we once more headed east and in an hour and five minutes, New London Light was abeam. Here we were: only three hours and thirty-five minutes away from New York by Bear Cat on a Sunday afternoon. We had reached here without a trace of discomfort, not a traffic cop or any other kind of officer had ordered us to do this or that. Not once was it necessary to change our speed or even touch the throttle or spark. The four-cylinder Hall-Scott motor with which the Bear Cat is powered, purred along mile after mile without any attention whatsoever, not once did we have to change our course to pass a boat ahead of us—except once we sighted Commodore Jackson's cruiser Victory II on the horizon on our starboard bow, so we altered our course a few points and were abeam of him in a few moments' time. So quietly did

the Bear Cat overtake Victory II that we were less than a minute astern of her before the Commodore knew of our approach. So startled, and we might add, surprised to see us was the Commodore, who we believe had already been en route for New London two days when we caught him less than two hours from our time of start, that he momentarily forgot the name of our boat, hailing us as Wild Cat or Krazy Kat, an error for which he later apologized.

Two days later, after the start of the race to Bermuda which took place outside of New London Harbor, we made the return run to New York in even quicker time than the outbound passage. After the start, we returned to New London where we landed the guests whom he had on board. After gassing up, we headed west at just 12:45 P. M. and at five minutes past four we were tied up at our landing in Manhasset Bay, hours ahead of those who returned to New York by train had reached their destination.

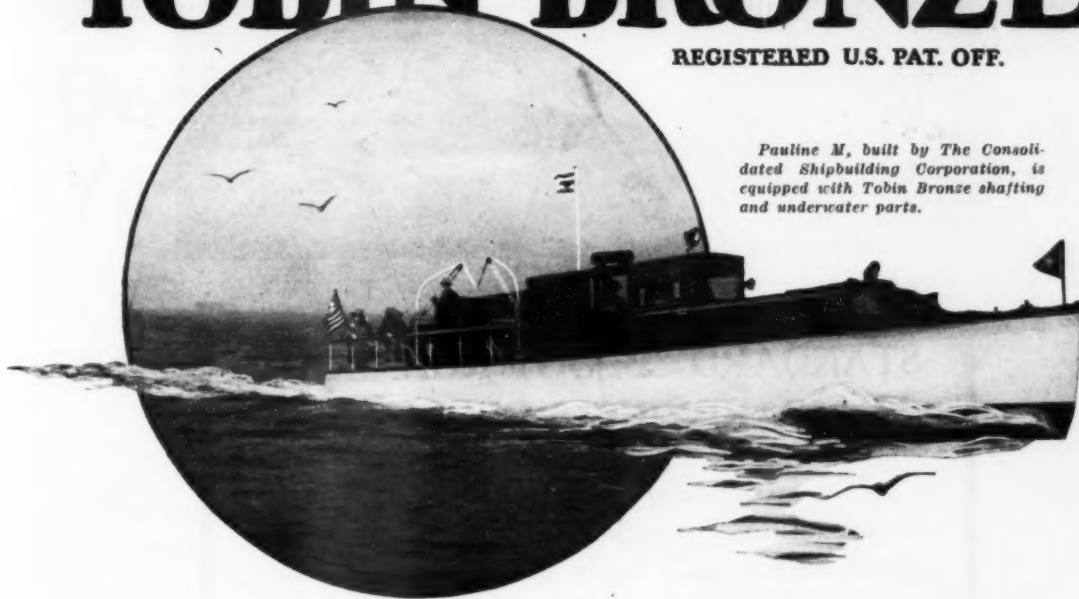
In all this 300 miles of running, not one adjustment was made to power plant or accessories. It was all made in absolute comfort—comfort far surpassing the most luxurious motor car, faster than either automobile or regular railroad train. And it was all made without dust or dirt, without the interference of police officer or the discomfort of congested roads and at a cost no greater than that of operating an automobile. And there still exist some who believe the fast motor boat has not come to stay. Our only answer to these is that some day they will think differently—this day may be far off but if they will take a trip in a Bear Cat, the change of heart will be tomorrow.

Navy Department Selling Supplies

Large quantities of desirable merchandise including numerous boats and hulls of all kinds are being sold by sealed bids by the Navy Department from the Central Sales Office at Washington, D. C. Bulletins announcing these sales are being published continuously and anyone who is in the market for such items as are included in the Navy lists, will do well to examine into the merits of these articles. It is possible to obtain anything from bolts to battleships, and the choice between these extreme limits is very wide.

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Pauline M., built by The Consolidated Shipbuilding Corporation, is equipped with Tobin Bronze shafting and underwater parts.

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PAULINE M., recently built by The Consolidated Shipbuilding Corporation for Mr. P. M. Howell, is an excellent example of a well-built power yacht.

Tobin Bronze was selected for her propeller shafting and underwater parts.

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Tobin Bronze is manufactured solely by The American Brass Company and is supplied in the form of sheets, rods, tubes and turned and straightened yacht shafting.

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We urge anyone considering Sea Sleds for Summer delivery to communicate with us without delay.

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Inverted V-bottom and Surface Propeller boats.

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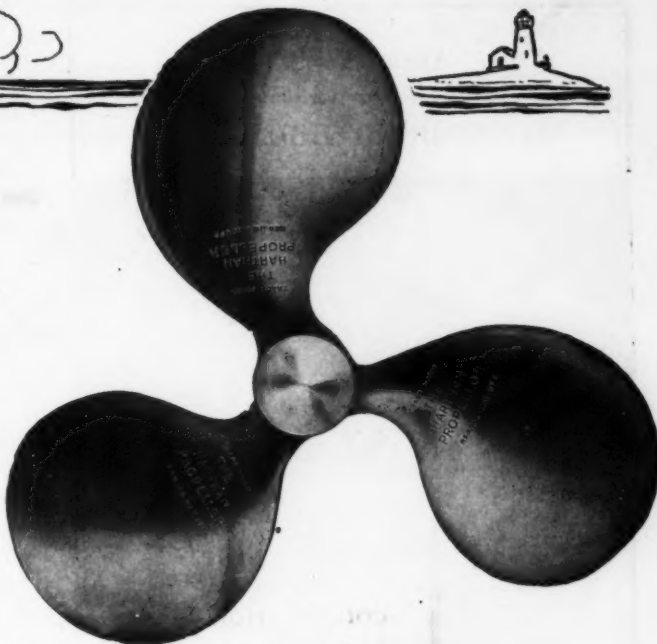
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IF your boat isn't as fast as it ought to be, or if it burns too much gasoline per mile and per hour, don't blame your engine. Perhaps your propeller wheel is bent or out of true, or maybe it isn't just the right size or pitch to give the best results with your hull and power plant.



The selection of a proper propeller is one of the most important details in perfecting the efficiency of your outfit. We will be glad to help you determine the correct size and type for your boat.

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THE Harthan is correctly designed in the first place, and then we take every precaution in its manufacture to make sure you will get all the efficiency and durability that can be built into a wheel by careful workmanship and fine materials. It is carefully balanced, machined and polished so as to run without vibration and to cut through the water with minimum friction.

Boat builders and architects often try several different wheels on a new boat before they find the one that gives the right engine revolutions and maximum boat speed. All their experience and careful computations are secondary in importance to the actual trial. It is just as important for the boat owner to determine that he has the right wheel. Don't assume

it is correct just because it was on the boat when you bought it.

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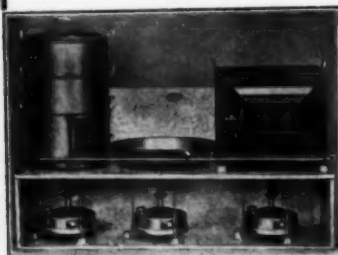
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We also build high grade yacht ranges for coal or oil fuel. Complete for roasting, baking, boiling, broiling, etc. A favorite for years with leading Naval Architects. Used on most prominent yachts afloat.

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Elisha Webb & Son Co.

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Yard and Shop

(Continued from page 44)

construction makes it immune from the injurious effects experienced by other types of pumps in this service, due to dirty water handled. The Arrow construction protects the bearings from coming in contact with the water being handled, and provides a positive supply of oil to them. There is only one working part in this pump, which is the impeller. This will wear indefinitely in most any service. It will retain its prime and work within its capacity above the level of supply, without the use of check valves, which are not dependable.

Royalty Buys a Kermath

The Kermath dealer at Rotterdam, Holland, is quite proud of the fact that he has recently sold to the Queen of Holland, a Kermath motor for use on one of her small boats, to be used particularly for her journey in the Fjords of Sweden. Other prominent users in Holland are the Rotterdam Lloyd Steamship Company for small boats, and other leading ship builders, and fire engine manufacturers.

Presentation Radio Set

In commemoration of the first time that the voice of a singer has been radiophoned from America to Europe, on February 23, 1923, the Choral Society of New York will present to Miss Edith Bennet one of the Whiteland radio receiving sets. This set is to be suitably inscribed on a silver plate which will be attached to the instrument and which will read as follows: "In commemoration of the occasion of the first singer's voice to be radiophoned from America to Europe, February 23, 1923, 12 P.M., New York time, 400 meter wave length." In seeking about for the highest grade instrument to use for this presentation, the Choral Society selected the Whiteland set as being the best all around instrument.

Standardized Boats

There is still time for the delivery of new boats for use this summer if orders are placed promptly. Many builders of standardized boats are enabled by reason of their shop facilities and building methods, to complete a boat in a very short space of time. Among these builders can be mentioned the Racine Boat Company in Racine, Wis., who are building a series of fast V-bottom runabouts in sizes ranging from 19 to 30 feet in length. Their assortment of boats includes other popular sizes as well as fast boats. The construction of all their boats is of the highest quality and excellent workmanship. A special model is a hull which has been particularly designed to be equipped with an outboard engine. This boat is carefully made with ample displacement in the stern so that it does not squat when under way.

Linoleum Cement

In many cases where linoleum is used as a floor covering on board boats and yachts, it is not properly attached to the floor which it covers. The proper way to secure this material is by the use of the special grades of glue made for this particular purpose. These cements will attach linoleum to any type of floor, either wood, concrete or steel. A special form of these glue products is made by L. W. Ferdinand & Co., of Boston, Mass., under the trade name of Twentieth Century Glue Cement. The properties of these glues are such as to cause them to hold firmly any materials upon which they are placed. They are water proof, and not subject to temperature changes.

A Heavy Oil Carbureter

The increasing use of fuel oil has become so pronounced that it is difficult for the ordinary type of carbureter to handle the inferior grades of fuel now furnished. An exception is the carbureter made by the Ensign Carbureter Company of Chicago, which is particularly designed to consume the heavier fuels. It will deliver a mixture of fuel and air to an engine, in which the particles of fuel and the mass of air are thoroughly and uniformly mixed in the correct proportions. The manifolding of the intake is also an essential to correct combustion and this has been carefully studied so that proper recommendations can be made to suit individual conditions. The action of this carbureter is by whirlpool effect, which causes the fuel to flow from the suction nozzle and throws it violently about by the centrifugal force of the air stream. There are no moving parts in this device, and the entire action is due to the whirling action of the air as it flows through the chambers. Descriptive circulars on this carbureter can be obtained by writing the company, at 108 South Michigan Avenue, Chicago.

The Elto Has 23 Square Inches of Crankshaft and Connecting Rod Bearing Surfaces

This Represents the Bearing Area of Other Lightweight Motors



Bearing Area and Piston Displacement tell the TRUTH about Durability, Speed and Power

GET a mind picture that will stay with you, of the "graph" at the top of this page. It tells the true story of motor service-life performance, and durability. It is not opinion, not merely a claim. It is an accurate picture of a mechanical, mathematical, indisputable fact—that the ELTO has more than double the bearing area of any other light weight twin outboard motor.

Fix this fact in your mind too—that the ELTO has full 3 horsepower, not according to someone's "say-so", but by the mathematical accuracy of piston displacement. This is a full extra horsepower over any other light twin motor—the needed extra horsepower to insure boat control in sudden squalls, currents, tides, and heavy winds—and to give speed to substantial seaworthy boats.

Remember always, that you can trust Ole Evinrude to build light,

but only as light as right—at no sacrifice of safety, speed or durability.

Yes, the ELTO is instant starting on the first quarter turn by anybody! Your experience and common sense tell you that there can be no relief from hard, stubborn starting without change of ignition. ELTO made the change! It's the motor that "starts as easily as striking a match".

Speed! The ELTO is the fastest of outboard motors—proved so by official races. It should be the fastest, for speed is a matter of power, and the ELTO has an extra horsepower. It is the most powerful of light weight motors—the lightest motor per horsepower!

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ELTO OUTBOARD MOTOR COMPANY
Dept. F, Manufacturers Home Bldg.
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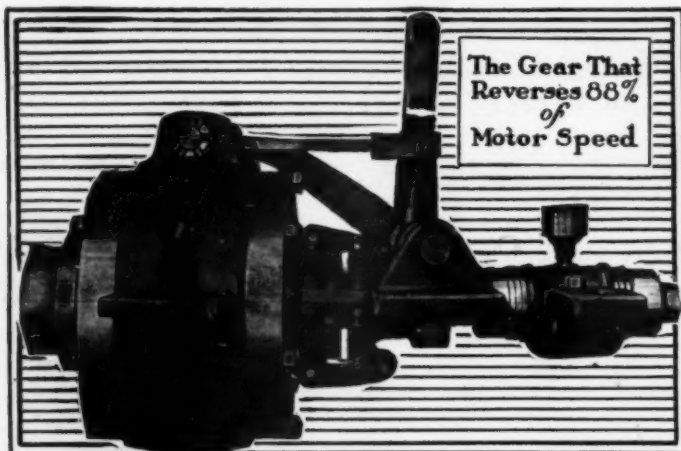
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**3 H.P. Fast
Light Twin**
"As light as right"

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Packard "Puts It Up to Old Man Joe"

Mr. J. C. Vincent, Vice President of Engineering, in the following paragraphs from recent letters, tells why, after thorough tests, they have standardized on Joes Reverse Gears for their Gold Cup and Sweep Stakes Motors.

"I am glad to be able to advise you that my Packard Chriscraft boat with which I won the Gold Cup Race is equipped with one of your Joes Reverse Gears, and that it rendered completely satisfactory service."

"I have been somewhat undecided about reverse gear equipment, but after my experience with your gear, I feel inclined to adopt it."

"I feel that we should plan on standardizing your No. 143 special racing model for use in both our IM-618 and IM-1237 engines. I am led to make this decision on several counts."

"Reliability and smooth action at high speed are of more importance than cost."

"I believe that this clears up all design points, and I am therefore inclosing our order for twelve units."

This is the sixth of a series. Watch next month for the reason why the Peerless Marine Motor Company,

—put it up to old man Joe

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REVERSE 80%-88% of MOTOR SPEED



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Propels your boat anywhere it will float

THINK of it—anywhere a boat will float the new and improved L-A Rowboat Motor will drive your craft. In water ankle deep, over submerged rocks, sand bars, snags and deadheads, the L-A will take you there and back, *without damage to your boat—without damage to your motor. It is double proof against stones, snags, deadheads.*

The L-A Self-Tilting Device protects the back end of your boat—the L-A Safety Propeller (patent applied for) protects the motor itself. Built on an entirely new principle, this propeller will take a battering from rocks, snags, sand bars or deadheads, and will continue on its way, uninjured. No pins to shear—nothing to repair. It gives you absolute dependability under all conditions.



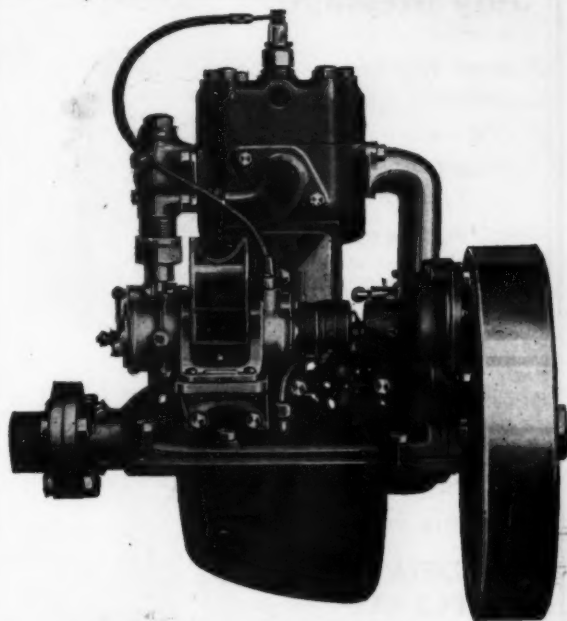
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Standard Equipment

Double-duty, built-in flywheel magneto; Easy rope starter; self tilting device; Safety propeller (patent applied for); Cast aluminum, indestructible gas tank. The new L-A Rowboat Motor offers a remarkable value—investigate it early.



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Simplified Radio for the Cruiser

(Continued from page 36)

The manipulation of this combination presents what will appear to the beginner as rather serious complications. The complications will rapidly disappear, however, for an optimum setting for the coupling control is found and it is allowed to rest. The vacuum tube circuits are then adjusted for a condition which very closely approaches the full regenerative state and the antenna circuit is brought into tune with the vacuum tube circuits by a variation of the condenser. Incoming signals are almost always to be picked up, for which reason there is seldom any difficulty about securing settings for all the controls such that the whole system is properly tuned to a given signal. However, quite a little more practice is required for the satisfactory manipulation of the circuit of Figure 2. This practice is well repaid due to the increased sensitivity and the very marked freedom from any interference which may be caused by stations on wavelengths other than those to which the operator wishes to tune. The most important consideration is the proper setting of the coupling control. Its setting will depend in all cases upon the characteristics of the particular antenna to which the receiving equipment is connected. It may be found by a little experimentation and is always what is known as a rather "loose" coupling, which is to say that the axes of the two coils in the coupler are almost at right angles to each other.

In Figure 3 is shown the circuit of a two stage audio frequency amplifier. Without great trouble and with slight additional expense for transformers, tubes, and filament rheostats, this device may be added to either of the above receivers. This, under almost all conditions will enable the operation of some type of loud speaker horn, thus making it possible for a considerable company of people to enjoy the concert without the necessity for wearing head telephones. Lacking the amplifier and the loud speaking horn, several pairs of telephones may be connected in series in either of the above circuits, in which case it is desirable that a fixed condenser be shunted across the series of telephones as indicated in Figure 1 by the dotted connection.

Active Season Opens on the Pacific

(Continued from page 33)

Frank's Lucky Strike I, in a special trial, made the mile in 1 minute and 34 seconds, or at the rate of 38 m.p.h. This boat is in the 710 cu. in. class, powered with a six-cylinder Hall Scott motor.

Hamlin's Joker II won the cup offered as first prize in the 610 class making the mile in 1 minute 36 and 4-5 seconds; Dustin Farnum's Hot Dog, 1 minute, 59 seconds, third, and Leo Berner's Scoot placed second at the rate of 1 minute, 48 and 1-5 seconds.

James T. Dickson, chairman of the club's power boat committee, officiated at the trials, assisted by Charley Keppen, Bill Wilbur and Manager Yocum of the club.

Admiral Albert Soiland's auxiliary schooner Viking IV won the inspection in the sailing class with a total of 99 points. G. Allan Hancock's cruiser Valero II captured first place in the power class with 99 points.

The inspection of the yachts was headed by three government marine inspectors and a committee of two representatives of the Santa Barbara, Newport and San Diego Yacht clubs.

Fleet Capt. Paul Jeffers made the arrangements for the inspection and William C. Warmington, chairman of the club's entertainment committee, made the arrangements for the dinner and dance entertainment which was attended by more than 300 members and their guests.

Leo Berner's speedboat Scoot captured the Alvin H. Frank trophy in an 18-mile race for craft of the 610 cu. in. class over a three-mile course off the Harbor Sunday morning, May 13.

Scoot beat Ralph Hamlin's Joker to the finishing gun by 1 second elapsed time for two 9-mile heats. Averaging 30 miles an hour Scoot covered the distance in 36 minutes, 16 seconds and 1-5 seconds.

Phillip Swafeld's Valve-in-Head I, formerly owned by Hal Tuttle, finished third. Harry Vorhauer, driving Dustin Farnum's Hot Dog, was also entered and probably would have placed in this event, but the craft developed trouble with its water pump and was forced out.

Staff Commodore Otto G. Wildey, chairman-in-chief of the club's power and sailing committee, officiated at the power and sailing events assisted by Chairman Dickson and Edson B. Schock aboard Eugene Overton's palatial auxiliary schooner Spendifr. Overton is head of the Southern California Yachting association and commodore of the California Yacht club this year and under his direction the season here has attained a whirl-wind start.



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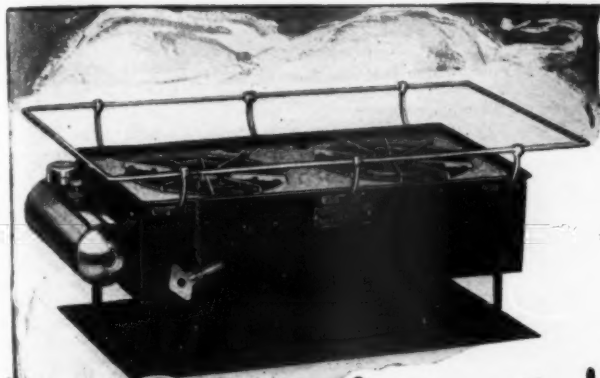
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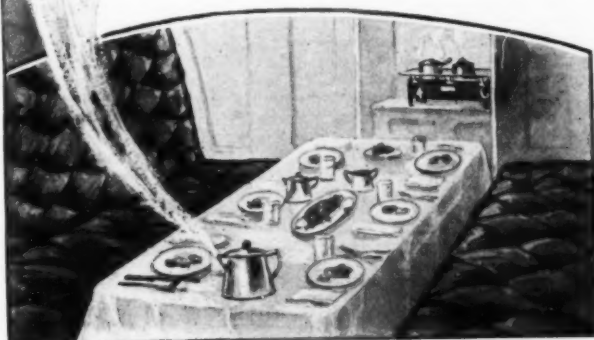
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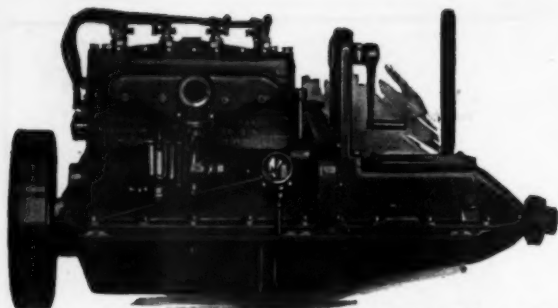
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Seventy Horse Power Midget Scripps

(Continued from page 30)

per minute, which was the maximum at which the engine was tested, the power curve was still going up and there was little falling off in the torque.

The new type F-4 Scripps was designed by William Taylor of the Scripps Motor Co. Mr. Taylor has had considerable experience designing internal combustion motors in the automotive field and his latest is one of the best and most efficient engines ever produced.

Together with John L. Hacker, the well known naval architect of Detroit, we were asked to witness a test recently, of the new motor in the test room of the Scripps Company at Detroit. The data obtained was used to plot the horsepower and torque curves shown on page 30.

The test was started at 800 r.p.m. and continued up to 2600 revolutions with dynamometer readings at intervals of about every 50 revolutions. As will be seen from the curve, at 800 r.p.m. about 25 horsepower was developed. At 1200 the power was nearly 40 h.p. while at 1600 r.p.m. it showed better than 50 horsepower, certainly a remarkable performance for so small a motor. As the speed was increased, we were surprised that the power curve did not begin to fall off but continued upward. At 2000 r.p.m. the motor was pulling almost 60 h.p. Another 600 r.p.m. gave an additional 10 horsepower or approximately one horsepower for every three cubic inches of piston displacement.

White Cap a Special Runabout

(Continued from page 38)

Cockpit, Aft: The after cockpit to have a 9/16-inch coaming, with a 3/4-inch lazy back. The top piece of the bulkhead is to extend from side to side, and be of 9/16-inch mahogany. Space between this and the footboard is to be divided into three panels. These are to be plain, screw fastened, so as to be removable. The cowl support is to be 3/8 inch with a 3/4-inch cowl. Seat to be plain of 9/16-inch stock. The tops as indicated to be removable. They are to be so divided to take seats of a bucket type. Wicker Kraft seats suggested. The flooring is to be of 9/16-inch white pine and to be divided into three sections, meeting on the center of stringers, forward of the seats. A foot rest to be 9/16 inch and rest on a cleat fastened to the stringer. The flooring aft is to have a permanent 6-inch piece on both ends. The balance being made into one removable section. The ends to be made of 3/8-inch mahogany, forming a panel which can be covered with 1/16-inch linoleum, which will make all of the same thickness. This should be further bound with aluminum. The after seat is to be built in, or an open removable seat is suggested, with a space underneath for life preservers. This may have a 1/2-inch paneled door, fill the after end. There should be a cleat on each side in alignment with the coaming. The door is to be held in place with turn catches. The cockpit sides are to be lined with 3/8 by 3-inch lattice, allowing about 3/32-inch opening between. The flooring is to lay thwartships with a cleat on the outside to support the ends as indicated on the drawings. The after seat, if of the open type, is to be supported by a post in the center. This may be either turned or plain. All fastenings into mahogany should be screws, wood plugged.

Painting, Varnishing, Finishing: The entire hull is to be thoroughly dressed and sanded. All seams in the bottom should be lightly caulked with spun cotton, rolled in, not hammered. Chine seam, caulked in the same manner. This will be followed by a priming coat of hot linseed oil, below the waterline, after which a priming coat of lead paint will be applied throughout. The seams on the bottom and chine should be filled with seam composition. Color and spar composition mixed to the consistency of putty, is recommended. If the bottom is to be bronze, the first coat on the bottom after the oil should be red lead, with the seams filled with red lead putty. If copper paint, apply a coat of copper over the oil coat. Do not use oil paint after the hot oil is applied. Use hard coat throughout. Mix paints with lead in oil and thin to proper consistency with turpentine. The bottom should have three coats of bronze, or two coats of copper, after the first coat. Top sides will have three or four coats of color as selected, white or gray suggested. The interior will have two coats of the desired color. The decks, if natural, and all wood work to have a coat of filler on all mahogany, followed by three coats of Valspar, to be well rubbed down between coats. If canvas covered, fill canvas with filler made for that purpose, and then apply a coat of lead paint. Two or three coats of Japan color should follow this, and a coat of varnish with the rest of the natural work. If desired, a coat of enamel of the desired color can be applied. The flooring will have two coats of lead paint with the end pieces finished naturally. If the decks are natural, mahogany covering boards and center pieces are suggested. Seams of about

(Continued on page 94)

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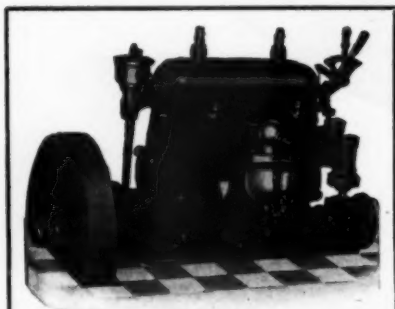
You not only get dependable service, but you get in a Gray, a smooth, quiet, clean, operating motor that tends to give you that pleasant feeling of relaxation, you seek.

In small cruisers up to 35 feet—Runabouts 20 to 30 feet and work boats the Gray 4 cylinder valve-in-head has given their owners better Economy and more speed than any other type of the same bore and stroke.

We don't ask you to rely entirely upon our statement but will gladly put you in touch with these owners.

What Engine of equal cylinder displacement do you know of that will turn a 14" dia. x 20" Pitch Hyde type Wheel constantly 1650 revolutions, or a 20" dia. Hyde Wheel, 900 revolutions.

Note the rigid one-piece base with Reverse Gear enclosed. The gear is automatically lubricated with positive gear pump that lubricates all other internal working parts of the engine—no grease cups or thick transmission oil used.

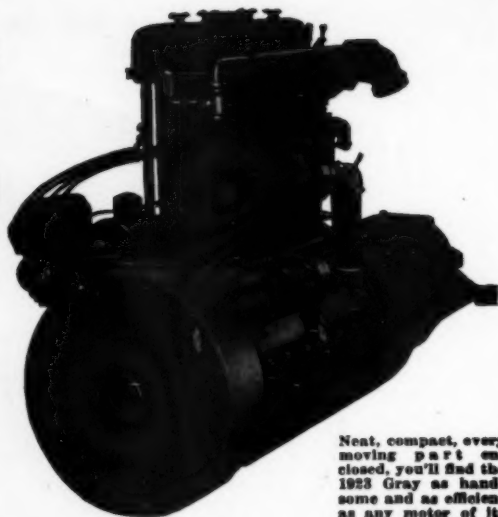


One of our most popular selling engines is the 2 cylinder 6 to 8 H. P. A most powerful and durable one, occupying less space for the power developed than any other, that we know of. Its easy starting, and dependable operation coupled with its wonderful economy, recommends it to those who are considering a motor for a pleasure boat 16 ft. to 24 ft. or for a fish or work boat up to 20 ft. requiring 6 to 8 H. P. For auxiliary power in sailing boats up to 35 ft. this little engine is a great favorite.

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Neat, compact, every moving part enclosed, you'll find the 1923 Gray as handsome and as efficient as any motor of its size ever built, regardless of price.

Oil filler is conveniently located on top of the engine with duct leading to Crank Case. Rocker arm shaft is hollow and automatically supplies oil to Rocker Arms. Oil is forced under pressure to the three main bearings, and to the connecting rod troughs.

In brief, the Gray Oiling System leaves nothing to chance. It is unfailing at all engine speeds, and all oil is kept inside the engine, and not thrown around the boat or on its occupants.

Due to the special design of the Cam Shaft, push rods and rocker arms, scarcely a sound can be heard with the ear close to the engine.

The smooth, quiet operation of the new Gray Improved Valve-in-Head at all speeds from 200 to 2000 would compare favorably to an electric motor. It runs most economically on low grade gasoline and satisfactorily on kerosene.

Note The Big Crankshaft

The diameter of the main bearings are: Front $2\frac{1}{8}$ ". Center $2\frac{1}{16}$ ". Rear 2". The lengths are $3\frac{3}{4}$ ", $2\frac{1}{4}$ ", $2\frac{1}{2}$ " respectively. Crankshaft is 40-50 point carbon steel forging, heat treated and ground.

Special attention is given to the balancing. The shaft is put in rotative as well as static balance on an Akinoff Dynamic Balance Machine, reducing vibration to a minimum.

Bosch Magneto with Impulse Starter, or Bosch two unit Starter and Generator is used.

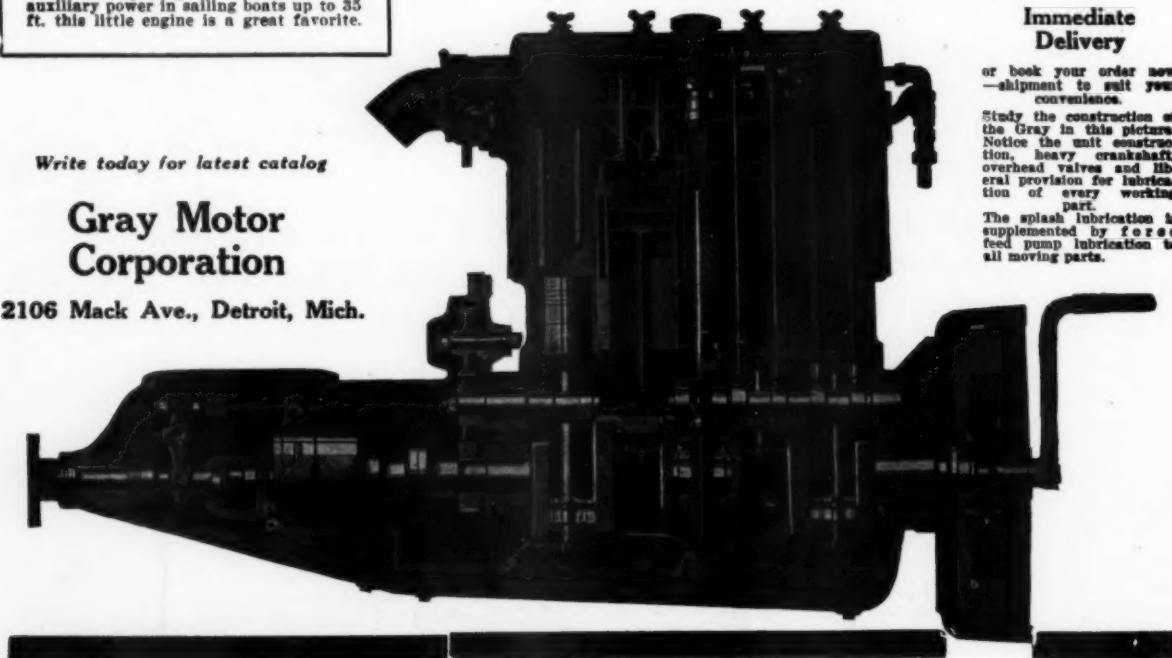
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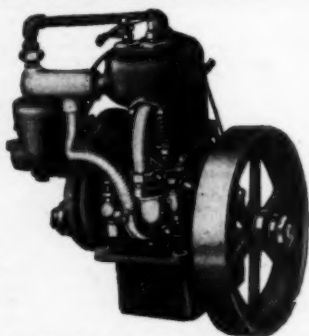
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PHILADELPHIA

White Cap a Special Runabout

(Continued from page 90)

3/32 inch should be allowed and filled with Jeffery's black marine glue or composition. If marine glue is used, dress the deck roughly and then fill with glue and finish the decking. If canvas deck, cover hatch covers with 3/16-inch mahogany veneer or Haskelite, and brass screw fasten. A single piece of 5/16-inch mahogany may be used if desired, all fastenings wood plugged.

Fender: This will be of 1½-inch half round mahogany, slightly tapered at the stem and stern, and securely screw fastened, with holes wood plugged.

Bulkhead: There will be a bulkhead on station No. 3. This can be either ¾-inch Haskelite or two-ply of ¼-inch white pine, laid diagonally, in opposite directions, with light canvas duck between, laid in marine glue, and either copper rivet or clinched nail fastened every 2½ inches. An opening of approximately 16 inches by the width of the inside of stringers to be allowed for access. There will be a backing so that this will form a door which can be securely screw fastened to the same on a gasket, so that it will be watertight.

Hardware and Fittings: The steering wheel and gear can be of the auto type, actuating with a push rod to the tiller, or with regulation cable as desired. This may have a 16 or 18-inch rim. If cable type is used, the Carpenter divided drum type is recommended. The auto type can be secured from the architect.

The rudder to be manganese bronze casting, as shown on the plan, and extend through a 1-inch stuffing box to a hanger and be equipped with a sliding tiller or quadrant. If cable, it is to have ¼-inch Swedes iron or bronze cable, leading through 3-inch sheaves with necessary fair leads and turn buckle for take-up.

The strut will be of manganese bronze and supported with 5/16-inch bolts through a heavy reinforcing block on the inside.

The shaft log to be of the Erico type or the Hacker no-bind type.

There will be a special bow plate or bow chock.

Fit a cabin type ventilator over the watertight bulkhead.

Supply a Hacker combination bitt, post light, and flag socket.

Two large-size clam shell ventilators with a motor-driven horn, installed under one.

Four 5-inch chocks, one 8-inch cleat, four 5-inch cleats, and two 6-inch cleats. The after flag socket to be combined with a light.

Piano hinges on hatches which are to be bound with 1¼-inch No. 16 gauge brass, screw fastened.

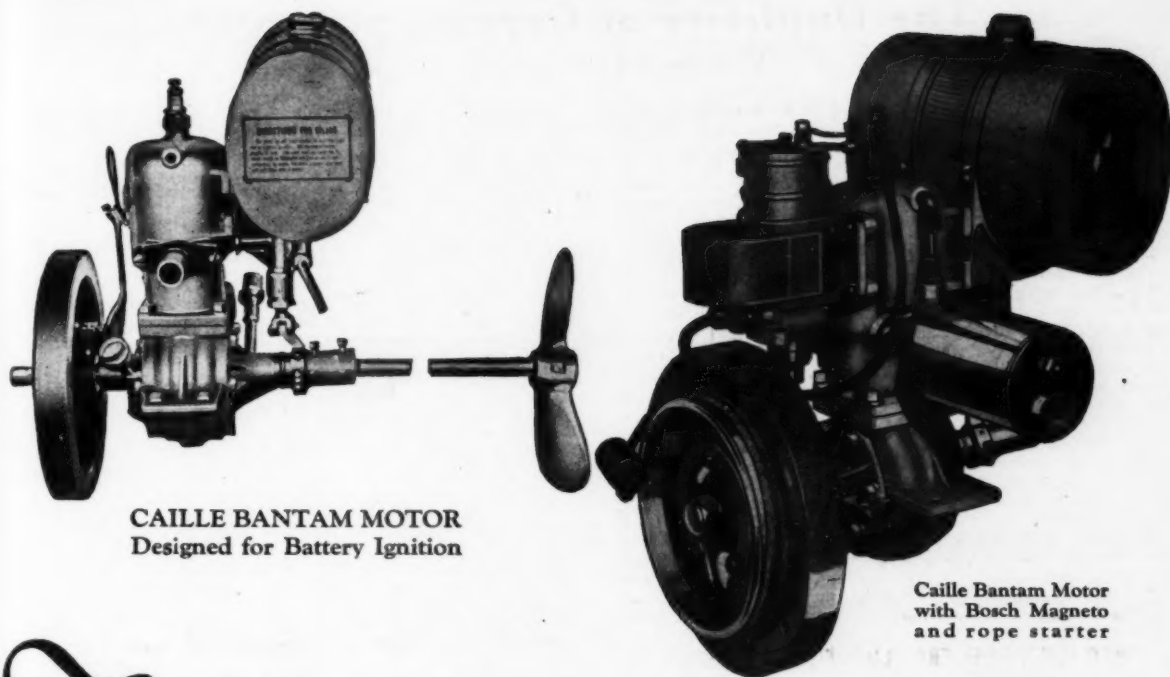
One pair lifting handles, one pair of hatch quadrants.

A special cutwater. Write A. J. Bennett, Clayton, N. Y., for instructions for measuring same.

Gasoline Tank: To be of a special type, made of No. 18 galvanized iron and 13 by 14 by 32 inches in length. Seams are to be riveted every 1½ inches and well soldered. There will be three splash partitions, well anchored. It is to have a 1½-inch filler opening on top and also one ¾-inch I. P. opening, in which insert a stand pipe to reach within ¾ inch of the bottom. There should also be a drain plug. Fuel to be carried from the tank to the engine through a vacuum system. The tank for this is to be installed under the after deck and well chocked in place. Extend pipe from tank to deck and install a regulation 1½-inch filler. All fittings to be of polished bronze or nickel plated as desired.

Electric Wiring: All wiring is to be concealed as much as possible, and to be done with either brewery cord or battleship type cable. There will be separate circuits for the running lights and for the stern lights. One to the engine compartment, where two or four lights may be installed, and one plug in for a search light or a spot light. There will be a dash light of a switch type. Provide a four-gang switch to handle the various circuits.

Motor Installation: The motor specified for this boat is the White Cap, six cylinder, made by the Wisconsin Motor Manufacturing Company, Milwaukee, Wis. This is to be properly aligned and securely bolted to the engine deck with ½-inch bolts. The shaft to be 1¼-inch steel or bronze. To be tapered and to carry a 16-inch diameter, 18-inch pitch, three-blade propeller. The exhaust to be carried through copper or steel tubing with nipples brazed on the ends to make up the joints. All gasoline piping to be of annealed copper tubing, with joints made by means of S. A. E. or Imperial compression fittings. Fuel will be supplied by a Stewart vacuum tank of the large size, using ¾-inch tubing to the tank and 5/16-inch to the motor. Water connections to have suitable valves and strainer scoops. These connections are to be made up with pipe fittings and with flexible hose joints between to take up vibration. All wiring for ignition and starting motors to be as recommended by the engine manufacturer and executed in a first-class manner. Controls for the engine are to be carried to the operator's position at the steering wheel.



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Designed for Battery Ignition

Caille Bantam Motor
with Bosch Magneto
and rope starter

For Small Launches and Dingies

Here's the ideal motor for small launches and dingies. It's the most simple and compact little power unit ever devised. It is self-contained in every respect. Even the gasoline tank is attached direct to the motor. It comes complete in every particular.

The Caille Bantam Motor develops 2 H.P. and will drive an ordinary 16-foot boat at 7 to 9 miles an hour; a 17-foot canoe at 10 to 15 miles per hour. Users get from 20 to 25 miles from a gallon of gasoline.

And it's the easiest motor in the world to install. Anybody can do the job with a few ordinary tools. Just bolt the motor down to a piece of hard wood, drill a hole through the keel for the propeller shaft and attach the stuffing box. That's all. Thousands in use. All giving excellent satisfaction. Send for details. We build inboard motors up to 20 H.P.—also the famous Caille Five-Speed and Liberty outboard motors. Details on request.

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The Duplicity of Captain Scraggs

(Continued from page 18)

deck. Fortunately, a goodly head of steam was up in each tug's boilers; because of the fog and the liability to collisions and a consequent hasty summons, one engineer on each tug was on duty. Before Hicks and Flaherty were in their respective pilot houses the oil burners were roaring lustily under their respective boilers; the lines were cast off within a minute of each other, and the two tugs raced down the bay through the darkness and fog.

Both Hicks and Flaherty had grown old in the tow-boat service and the rules of the road rested lightly on their sordid souls. They were going over a course they knew by heart—wherefore the fog had no terrors for them. Down the bay they raced, the Bodega leading slightly, both tugs whistling at half-minute intervals. Out through the Gate they nosed their way, heaving the lead continuously, made a wide detour around Mile Rock and the Seal Rocks, swung a mile to the south of the position of the Maggie, and then came cautiously up the coast, whistling continuously to acquaint the Yankee Prince with their presence in the neighbourhood. In anticipation of the necessity for replying to this welcome sound, Captain Scraggs and Mr. Gibney had, for the past two hours, busied themselves getting up another head of steam in the Maggie's boilers, repairing the whistle, and splicing the wires of the engine room telegraph. Like wise men they were, however, they declined to sound the Maggie's siren until the tugs were quite close. Even then, Mr. Gibney shuddered, but needs must when the devil drives, so he pulled the whistle cord and was rewarded with a weird, mournful grunt, dying away into a gasp.

"Sounds like she has the pip," Jack Flaherty remarked to his mate.

"Must have taken on some of that dirty Asiatic water," Dan Hicks soliloquized, "and now her tubes have gone to glory."

Immediately, both tugs kicked ahead under a dead slow bell, guided by a series of toots as brief as Mr. Gibney could make them, and presently both tug lookouts reported breakers dead ahead; whereupon Jack Flaherty got out his largest megaphone and bellowed: "Yankee Prince, ahoy!" in his most approved fashion. Dan Hicks did likewise. This irritated the avaricious Flaherty, so he turned his megaphone in the direction of his rival and begged him, if he still retained any of the instincts of a seaman, to shut up; to which entreary Dan Hicks replied with an acridulous query as to whether or not Jack Flaherty thought he owned the sea.

For half a minute this mild repartee continued, to be interrupted presently by a whoop from out of the fog. It was Mr. Gibney. He did not possess a megaphone so he had gone below and appropriated a section of stove-pipe from the galley range, formed a mouthpiece of cardboard and produced a makeshift that suited his purpose admirably.

"Cut out that bickerin' like a pair of old women an' 'tend to your business," he commanded. "Get busy there—both of you, and shoot a line aboard. There's work enough for two."

Dan Hicks sent a man forward to heave the lead under the nose of the Aphrodite, which was edging in gingerly toward the voice. He had a searchlight but he did not attempt to use it, knowing full well that in such a fog it would be of no avail. Guided, therefore, by the bellowings of Mr. Gibney, reinforced by the shrill yips of Captain Scraggs, the tug crept in closer and closer, and when it seemed that they must be within a hundred feet of the surf, Dan Hicks trained his Lyle gun in the direction of Mr. Gibney's voice and shot a heaving line into the fog.

Almost simultaneous with the report of the gun came a shriek of pain from Captain Scraggs. Straight and true the wet, heavy knotted end of the heaving line came in over the Maggie's quarter and struck him in the mouth. In the darkness he staggered back from the stinging blow, clutched wildly at the air, slipped and rolled over among the vegetables with the precious rope clasped to his breast.

"I got it," he sputtered, "I got it, Gib."

"Safe, O!" Mr. Gibney bawled. "Pay out your hawser." They met it at the taffrail as it came up out of the breakers, wet but welcome. "Pass it around the mainmast, Scraggsy," Mr. Gibney cautioned. "If we make fast to the towin' bits, the first jerk'll pull the anchor bolts up through the deck."

When the hawser had been made fast to the mainmast, the leathern lungs of Mr. Gibney made due announcement of the fact to the expectant Captain Hicks. "As soon as you feel you've got a grip on her," he yelled, "just hold her steady so she won't drive further up the beach when I get my anchor up. She'll come out like a loose tooth at the tip of the flood."

The Aphrodite forged slowly ahead, taking in the slack of the hawser. Ten minutes passed but still the hawser lay limp across the Maggie's stern. Presently out of the fog came the voice of Captain Dan Hicks.

"Flaherty! Flaher-tee! For the love of life, Jack, where are you? Chuck me a line, Jack. My hawser's snarled in my screw and I'm drifting on the beach."

"Leggo your anchor, you boob," Jack Flaherty advised.

"I want a line an' none o' your damned advice," raved Hicks.

"Tain't my fault if you get in too close."

"I'm bumpin', Jack. I'm bangin' the heart out of her. Come on, you cur, and haul me off."

"If I pull you off, Dan Hicks, will you leave that steamer alone? You've had your chance and failed to smother it. Now let me have a hack at her."

"It's a bargain, Jack. I'm not badly snarled; if you haul me out to deep water I can shake the hawser loose. I'm afraid to try so close in."

"Comin'," yelled Flaherty.

"Now, ain't that a raw deal?" Scraggs complained. "That junk thief gets hauled off first."

"The first shall be last an' the last shall be first," Gibney quoted piously. "Don't be a crab, Scraggs. Pray that the fog don't lift."

Out of the fog there rose a great hubbub of engine room gongs, the banging of the Bodega's Lyle gun, and much profanity. Presently this ceased, so Scraggs and Gibney knew Dan Hicks was being hauled off at last. While they waited for further developments, Scraggs sucked at his old pipe and Mr. Gibney munched a French carrot. "If you hadn't canned McGuffey," the latter opined, "we might have been able to back off under our own power as soon as the tide is at flood. This delay is worryin' me."

Following some fifteen minutes of kicking and struggling out in the deep water, wither the Bodega had dragged her, the Aphrodite at length freed herself of the clinging hawser; whereup she backed in again, cautiously reeving in the hawser as she came. Presently, Dan Hicks, true to his promise to abandon the prize to Jack Flaherty, turned his megaphone beachward and shouted:

"Yankee Prince, ahoy! Cast off my hawser. The other tug will put a line aboard you."

But Mr. Gibney was now master of the situation. He had a good hemp hawser stretching between him and salvation and until he should be hauled off he had no intention of slipping that cable. "Nothin' doin'," he answered. "We're hard an' fast, I tell you, and I'll take no chances. It's you or both of you, but I'll not cast off this hawser. If you want to let go, cast the hawser off at your end." Sotto voce he remarked to Scraggs: "I see him slippin' a three hundred dollar hawser, eh, Scraggsy, old stick-in-the-mud?"

"But I promised Flaherty I'd let you alone," pleaded Hicks.

"What do you think you have your string fast to, anyhow? A bay scow? If you fellows endanger my ship bickerin' over the salvage I'll have you before the Inspectors on charges as sure as God made little apples. I got sixty witnesses here to back up my charges, too."

"You hear him, Jack?" howled Hicks.

"Wouldn't that swab Flaherty drive you to drink," Gibney complained. "Trumpin' his partner's ace just for the glory an' profit o' gettin' ahead of him?" Aloud he addressed the invisible Flaherty: "Take it or leave it, brother Flaherty. I'll take it," Flaherty responded promptly.

Twenty minutes later, after much backing and swearing and heaving of lines the Bodega's hawser was finally put aboard the Maggie. Mr. Gibney judged it would be safe now to fasten this line to the towing bits.

Suddenly, Captain Scraggs remembered there was no one on duty in the Maggie's engine room. With a half sob, he slid down the greasy ladder, tore open the furnace doors and commenced shovelling in coal with a recklessness that bordered on insanity. When the indicator showed eighty pounds of steam he came up on deck and discovered Mr. Gibney walking solemnly round and round the little capstan up forward. It was creaking and groaning dismally. Captain Scraggs thrust his engine room torch above his head to light the scene and gazed upon his navigating officer in blank amazement.

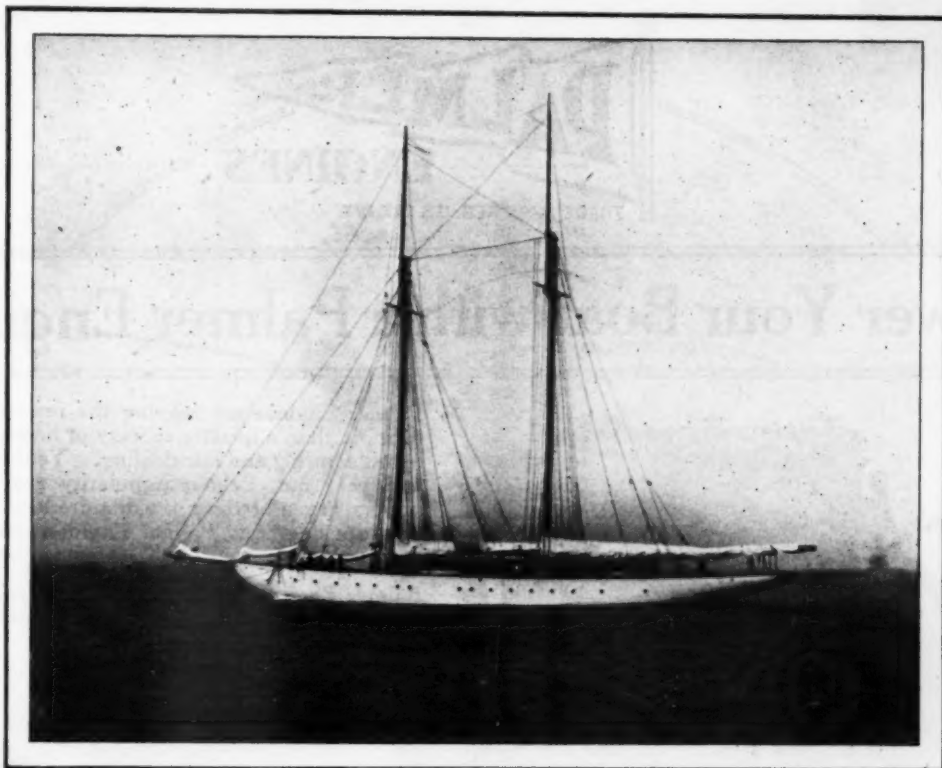
"What foolishness is this, Gib?" he demanded. "Are you clean daffy, doin' a barn dance around that rusty capstan, makin' a noise fit to frighten the fish?"

"Not much," came the laconic reply. "I'm a smart man. I'm raisin' both anchors."

"Well, all I got to remark is that it takes a smart man to raise both anchors when we only got one anchor to our blessed name. An' with that anchor safe on the fo'castle head, I, for one, can't see no sense in raisin' it."

"You tarnation jackass!" sighed Gibney. "You forget

(Continued on page 100)



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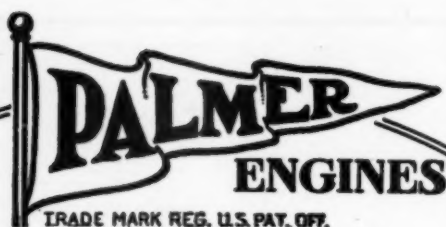
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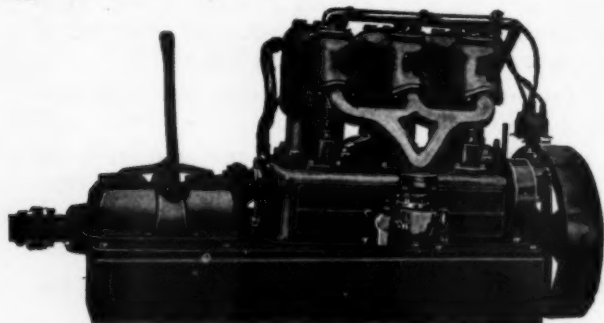
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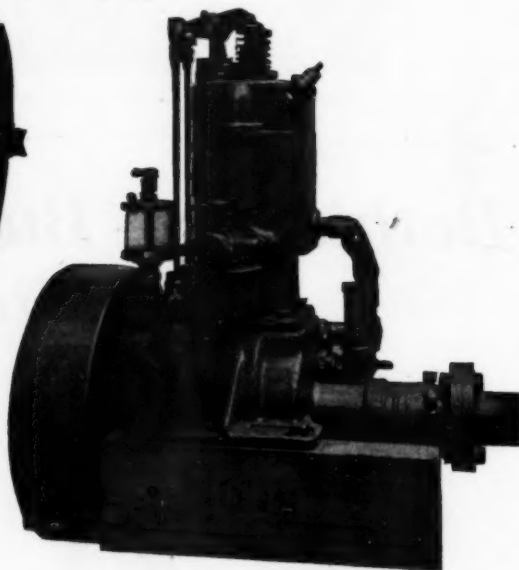


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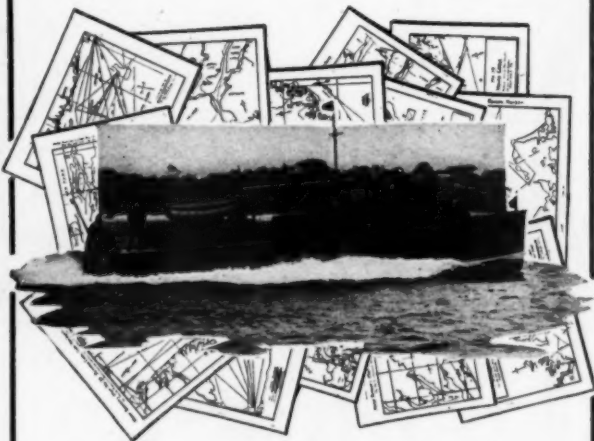
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The Duplicity of Captain Scraggs

(Continued from page 96)

who we are. Do you s'pose the steamer Yankee Prince can lay on the beach all night with both anchors out, an' then be got ready to tow off in three shakes of a lamb's tail? It takes noise to get up two anchors—so I'm makin' all the noise I can. Got any steam?"

"Eighty pounds," Scraggs confessed. Having for the moment forgotten his identity, he was confused in the presence of the superior intelligence of his navigation officer.

"Run aft, then, Scraggs, an' turn that cargo winch over to beat the band until I tell you to stop. With the drum runnin' free she'll make noise enough for a winch three times her size, but you might give the necessary yells to make it more lifelike."

Captain Scraggs fled to the winch. At the end of five minutes, Mr. Gibney appeared and bade him desist. Then, turning his improvised megaphone seaward he addressed an imaginary mate: "Mr. Thompson, have you got your port anchor up?"

Scraggs took the cue immediately. "All clear forward, sir," he piped.

"Send the bosun for'd an' heave the lead, Mr. Thompson."

"Very well, sir."

Here The Squarehead, who had been enjoying the unique situation immensely, decided to take a hand. Presently, in singsong cadence he was reporting the depth of water alongside.

"That'll do, bosun," Gibney thundered. Then, in his natural voice to Scraggs: "All set, Scraggsy. Guess we're ready to be pulled off. Get down in the engine room and stand by for full speed ahead when I give the word."

"Quick! Hurry!" Scraggs entreated as he disappeared through the little engine-room hatch, for the tide was now at the tip of the flood and the Maggie was bumping wickedly and driving further up the beach. Mr. Gibney turned his stovepipe seaward and shouted: "Tugboats, ahoy!"

"Ahoy!" they answered in unison.

"Alread-y-y-y! Let 'er go-o-o-o!"

The Squarehead stationed himself at the bitts with a lantern and Mr. Gibney hastened to the pilot house and took his place at the wheel. When the hawsers commence to lift out of the sea, The Squarehead gave a warning shout, whereupon Mr. Gibney called the engine room. "Give her the gun," he commanded Scraggs. "Pull against them tugs for all you're worth. Remember this is the steamer Yankee Prince. We must not come off too rapidly."

Captain Scraggs opened the throttle, and while the two tugs steadily drew her off into deep water, the Maggie fought valiantly to stick to the beach and even to continue her interrupted journey overland. She merely succeeded in stretching both hawsers taut; slowly she was drawn seaward, stern first, and at the expiration of fifteen minutes' steady pulling, Mr. Gibney could restrain himself no longer. He rang for full speed astern—and got it promptly. Then, calling Neils Halvorsen to aid him, he abandoned the wheel and scrambled aft.

With no one at the wheel the Maggie shot off at a tangent and the hawsers slacked immediately. In the twinkling of an eye Mr. Gibney had cast them off, and as the ends disappeared with a swish over the stern he ran back to the pilot house, rang for full speed ahead, put his helm hard over, and headed the Maggie in the general direction of China, although as a matter of fact he cared not what direction he pursued, provided he got away from the beach and placed distance between the Maggie and two soon-to-be-furious tugboat skippers.

As the Maggie chugged blithely away, the navigating officer's soul expanded in song, and in the voice of a bull walrus he delivered himself of a deep sea chantey more popular than proper.

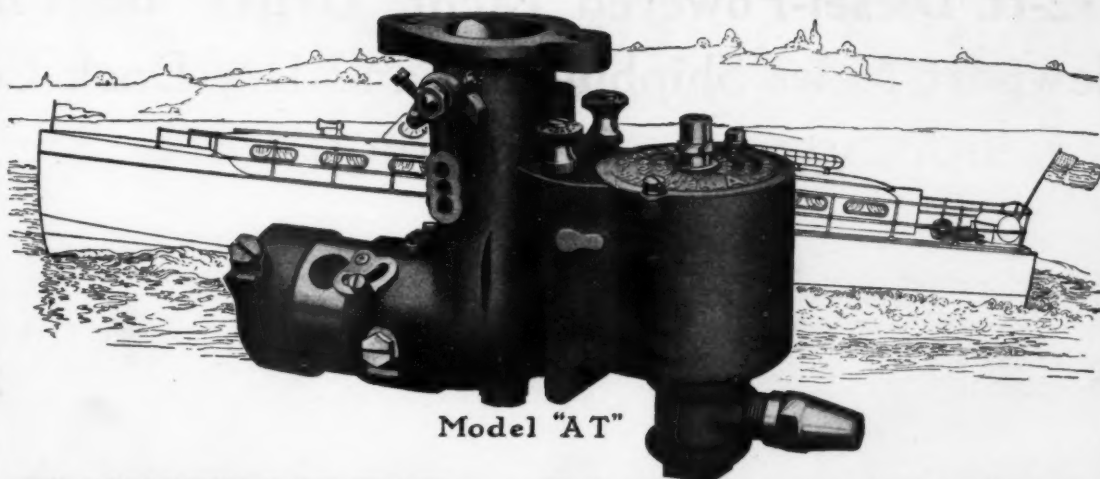
Presently, away off in the fog, he heard the Bodega whistle. The Aphrodite answered immediately. Adelbert P. Gibney smiled and bit a large crescent out of his navy plug, for his soul was at peace. When The Squarehead came into the pilot house presently and grinned at him, Mr. Gibney handed Neils an electric torch. "Prowl around below in the old ruin, Neils," he commanded, "and see if we're makin' any water."

A quarter of an hour later Neils Halvorsen returned to report the Maggie apparently undamaged, so Mr. Gibney changed his course and headed stealthily in the direction of the whistling tugs. He came up behind them presently—approaching so close under cover of the fog that he could hear Dan Hicks and Jack Flaherty, both under a dead-slow bell, felicitating each other through their megaphones.

"Where d'ye suppose that dirty scoundrel's gone?" Hicks was demanding.

"Out to sea, of course," Flaherty bellowed. "He'll stand

(Continued on page 104)



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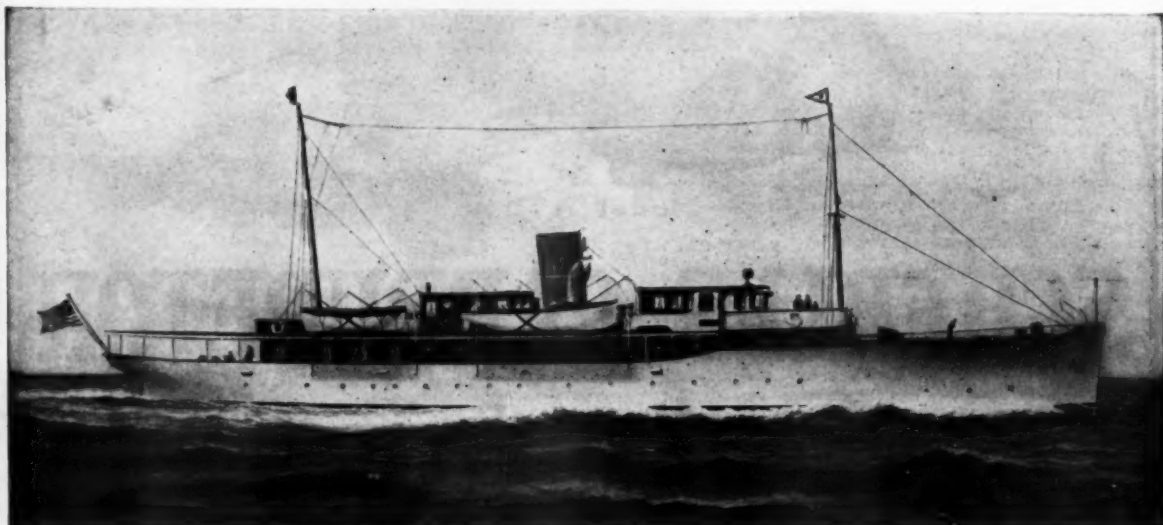
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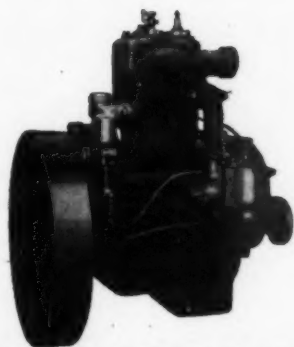


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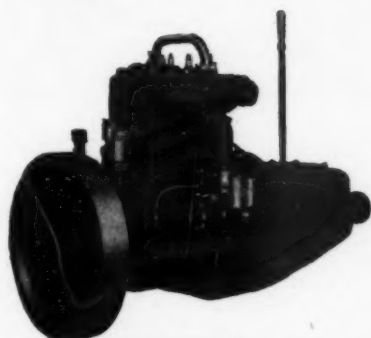
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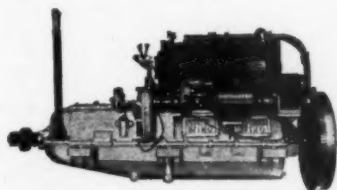
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The Duplicity of Captain Scraggs

(Continued from page 100)

off until the fog lifts and then come ramping in as proud as Lucifer and look amazed when we send him in a bill."

"Bill!" Hicks' voice dripped with sarcasm. "The Red Stack Company will libel him, and if the old man doesn't, me an' my crew will."

"I'll bet a ripe peach he's a Jap, with a scoundrelly white skipper and white mates. They'll all stick together for a five dollar bill and swear they never was on the beach at all. If they do, how're we goin' to prove it?"

"That's logic," the eavesdropping Gibney murmured to the binnacle.

"Oh, hell's bells, shut up and let's go home," Dan Hicks cried wearily. "We can catch him when he comes in."

"Suppose he doesn't come in. Suppose he's bound for Seattle, Dan."

"We can libel him wherever he goes."

"I'll bet he gave us a fictitious name, Dan!"

"Stow that grief, Jack. Stow it, or I'll go mad. The Bodega has more speed than the Aphrodite, so poke ahead there and let's try to get in an hour's sleep before daylight. If you can't feel your way in I can."

"I'll just tag along silent and lazy-like after you two misfortunates," Mr. Gibney decided, "an' you'll do my whistlin' for me." He called Scraggs on the howler and explained the situation. "Regular Cook's tour," he exulted. "Personally conducted. Off again, on again, away again, Finnegan—and not a nickel's worth of loss unless you count them vegetables you hove at McGuffey. Ain't you proud o' your navigatin' officer, Scraggsy, old tarpot?"

"I am, Gib, but I'll be prouder'n ever if you can follow them towboats in without havin' to claw off Baker's beach or the Point Bonita rocks."

"Calamity howler," Gibney growled. Half an hour later he caught the echo of the Bodega's whistle as the sound was hurled back from the high cliffs at Land's End, off to starboard. A minute later he heard the hoarse growl of the siren from the fog station on Point Bonita, on the port beam. He knew where he was now with as much certainty as if he was navigating in broad daylight, so he loafed along a couple of hundred yards behind the Bodega, until the Maggie ceased pitching—when he knew he was in the still water inside the entrance. So he sheered over to starboard, with Neils Halvorsen heaving the lead, and dropped anchor in five fathoms under the lee of Fort Mason. He was quite confident of his ability to sneak along the waterfront and creep into the Maggie's berth at Jackson Street bulkhead, but having gone astray in his calculations once that night, a vagrant sense of consideration for Captain Scraggs decided him to take no more risks until the fog should lift. He could hear the Bodega and the Aphrodite tooting as they continued down the bay, so he knew they were headed for their berths at the foot of Broadway, fog or no fog.

When Captain Scraggs, having banked his fires, came up out of the engine room, Mr. Gibney laid a great paw paternally upon the skipper's shoulder. "Scraggsy, old salamander," he announced, "I think I've done enough to-night to entitle me to some sleep until this tulle fog lifts. Am I right?"

"You certainly are, Gib, my dear boy."

"Very well, then. I'll turn in. As for you, old sailor, your night's work is not ended. Have The Squarehead row you ashore in the skiff; I'll stay up an' work the patent foghorn so he can find his way back to the Maggie, while you hike downtown—"

"What for?" Scraggs demanded irritably. "I'm all wore out."

"This adventure ain't ended" Mr. Gibney warned him. "There's a witness to our perfidy still at large. His name is B. McGuffey, esquire, an' I'll lay you ten to one you'll find him asleep in Scab Johnny's boardin' house. Go to him, Scraggsy, an' bring a pint flask with you when you do; wake him up, beg his pardon, take him to breakfast, and promise him you'll do somethin' for his boilers. Old Mac's got a heart as tender as a infant's. You can win him over."

"Oh, Gib, use some common sense. Mac'll lay abed until noon. It stands to reason he'll have to, because he didn't take no change of clothin' with him, so he'll just naturally have to wait till his wet clothes get dry before venturin' forth an' spreadin' the news that the Maggie's on the beach. He doesn't know we're off, an' once we're tied up at the dock and we hear Mac's been talkin' we'll just spread the word that he was so soused he jumped overboard an' swum ashore without waitin' to see if we could back off. Lordy, Gibb, don't work me to death. I'm that weary I could flop on this wet deck an' be off to sleep in a pig's whisper."

"I dunno but what there's reason in what you say," Mr. Gibney agreed. "Well, turn in, Scraggsy, but the minute we

(Continued on page 108)

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Complete with Terminal

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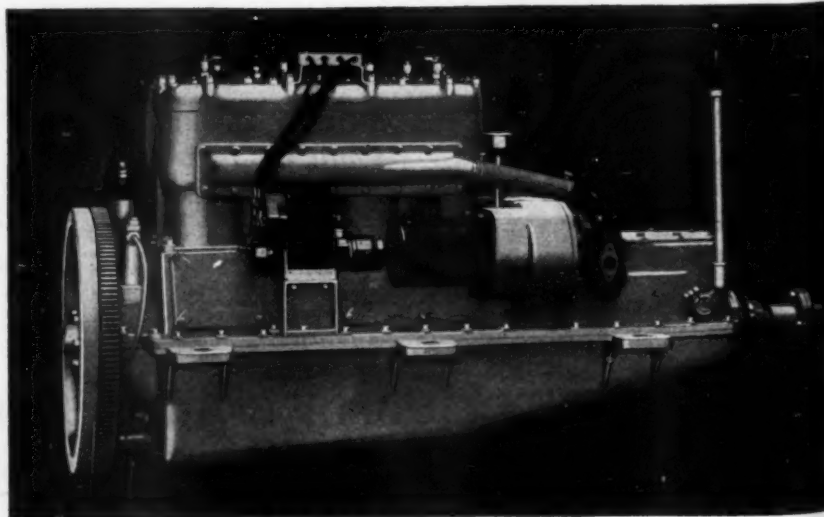
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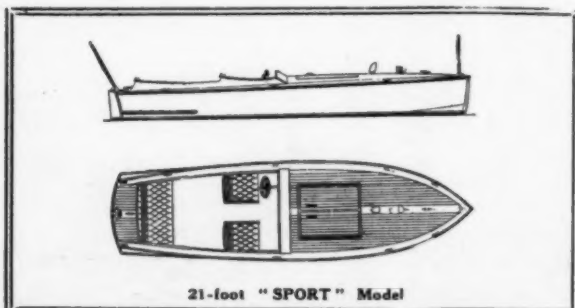
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The Duplicity of Captain Scraggs

(Continued from page 104)

hit the dock you run up town and fix things up with Bart."

And without further ado he set the alarm clock for seven o'clock, kicked off his shoes, and climbed into his berth with his clothes on.

The crews of the Aphrodite and the Bodega slept late also, for they were weary, and fortunately, no calls for a tug came into the office of the Red Stack Company all morning. About ten o'clock Dan Hicks and Jack Flaherty breakfasted and about ten thirty both met in the office. Apparently they were two souls with but a single thought, for the right hand of each sought the shelf whereon reposed the blue volume entitled "Lloyd's Register." Dan Hicks reached it first, carried it to the counter, wet his tarry index finger, and started turning the pages in a vain search for the American steamer Yankee Prince. Presently he looked up at Jack Flaherty.

"Flaherty," he said, "I think you're a liar."

"The same to you and many of them," Flaherty replied, not a whit abashed. "You said she was an eight thousand ton tramp."

"I never went so far as to say I'd been aboard her on trial trip, though—and I did cut down her tonnage, showin' I got the fragments of a conscience left," Hicks defended himself.

He closed the book with a sigh and placed it back on the shelf, just as the door opened to admit no less a personage than Batholomew McGuffey, late chief engineer, first assistant, second assistant, third assistant, wiper, oiler, water-tender, and stoker of the S. S. Maggie. With a brief nod to Jack Flaherty Mr. McGuffey approached Dan Hicks.

"I been lookin' for you, captain," he announced. "Say, I hear the chief o' the Aphrodite's goin' to take a three months' lay-off to get shet of his rheumatism. Is that straight?"

"I believe it is, McGuffey."

"Well, say, I'd like to have a chance to substitoot for him. You know my capabilities, Hicks, an' if it would be agreeable to you to have me for your chief your recommendation would go a long way toward landin' me the job. I'd sure make them engines behave."

"What vessel have you been on lately?" Hicks demanded cautiously, for he knew Mr. McGuffey's reputation for non-reliability around pay-day.

"I been with that fresh water scavenger, Scraggs, in the Maggie for most a year."

"Did you quit or did Scraggs fire you?"

"He fired me," McGuffey replied honestly. "If he hadn't I'd have quit, so it's a toss-up. Comin' in from Halfmoon Bay last night we got lost in the fog an' piled up on the beach just below the Cliff House—"

"This is interesting," Jack Flaherty murmured. "You say she walked ashore on you, McGuffey? Well, I'll be shot!"

"She did," Scraggs blamed it on me, Flaherty. He said I didn't obey the signals from the bridge, one word led to another, an' he went dancin' mad an' ordered me off his ship. Well, it's his ship—or it was his ship, for I'll bet a dollar she's ground to powder by now—so all I could do was obey. I hopped overboard an' waded ashore. I suppose all my clothes an' things is gone by now. I left everything aboard an' had to borrow this outfit from Scab Johnny." He grinned pathetically. "So I guess you understand, Captain Hicks, just how bad I need that job I spoke about a minute ago."

"I'll think it over, Mac, an' let you know," Hicks replied evasively.

Mr. McGuffey, sensing his defeat, retired forthwith to hide his embarrassment and distress; as the door closed behind him, Hicks and Flaherty faced each other.

"Jack," quoth Dan Hicks, "can two towboat men, holdin' down two hundred-dollar jobs an' presumed to have been out o' their swaddlin' clothes for at least thirty years, afford to be laughed off the San Francisco waterfront?"

"I know one of them that can't, Dan. At the same time, can a rat like Phineas P. Scraggs and a beachcomber like his mate Gibney make a pair of star-spangled monkeys out of said two towboat men and get away with it?"

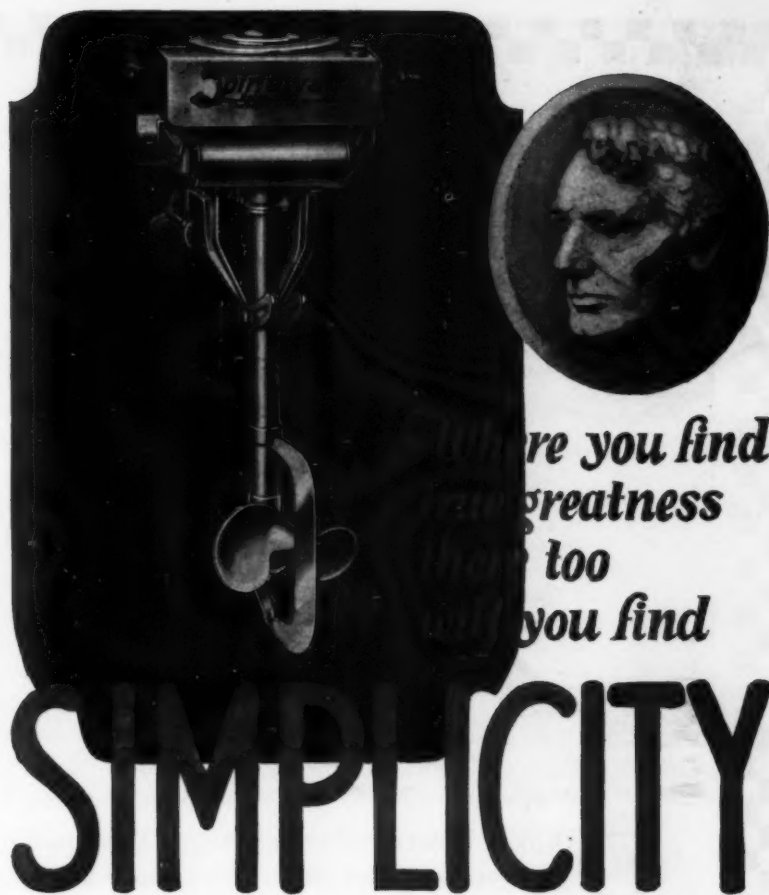
"They did that last night. Still, I've known monkeys that would fight an' was human enough to settle a grudge. Follow me, Jack."

Together they repaired to Jackson Street bulkhead. Sure enough there lay the Maggie rubbing her blistered sides against the bulkhead. Captain Scraggs was nowhere in sight, but Mr. Gibney was at the winch, swinging ashore the crates of vegetables which The Squarhead, and three longshoremen loaded into the cargo net.

"We're outnumbered," Jack Flaherty whispered. "Let's wait until she's unloaded an' Gibney an' Scraggs are aboard alone."

They retired without having attracted the attention of Mr. Gibney, and a few minutes later, Captain Scraggs came down the bulkhead and sprang aboard.

(Continued on page 114)



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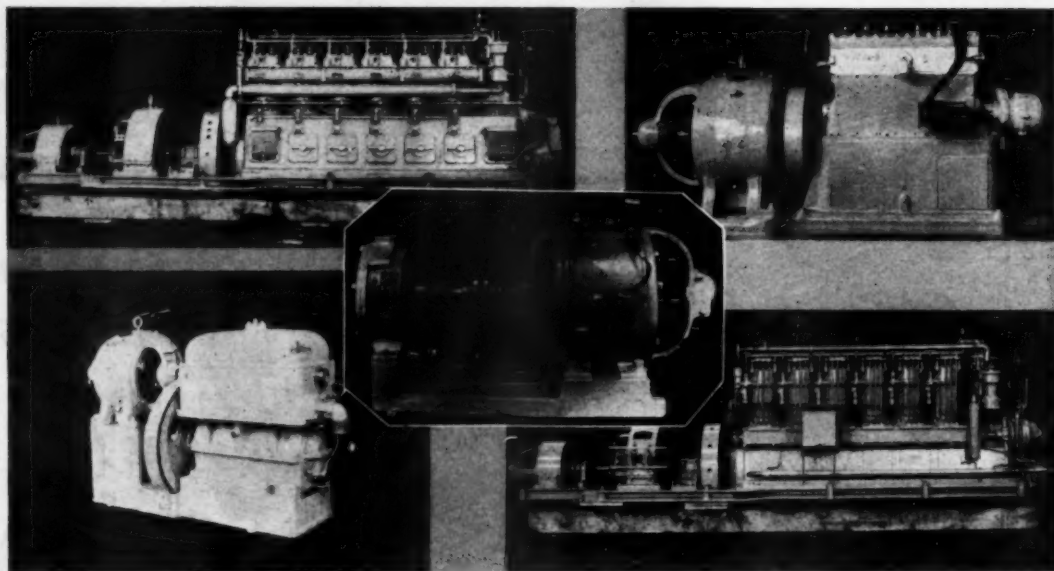
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Winton

Advertising Index will be found on page 126



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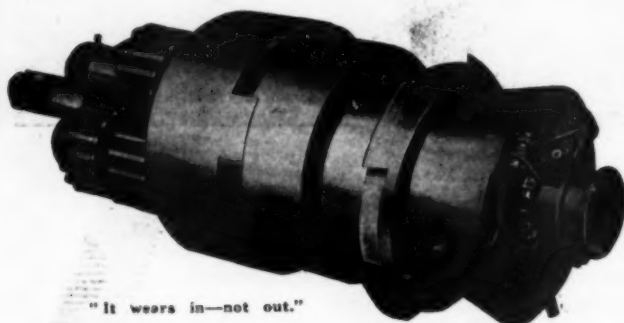
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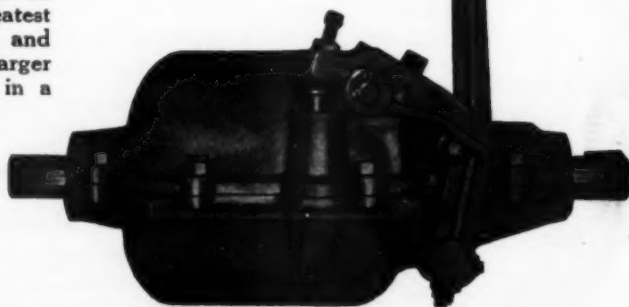
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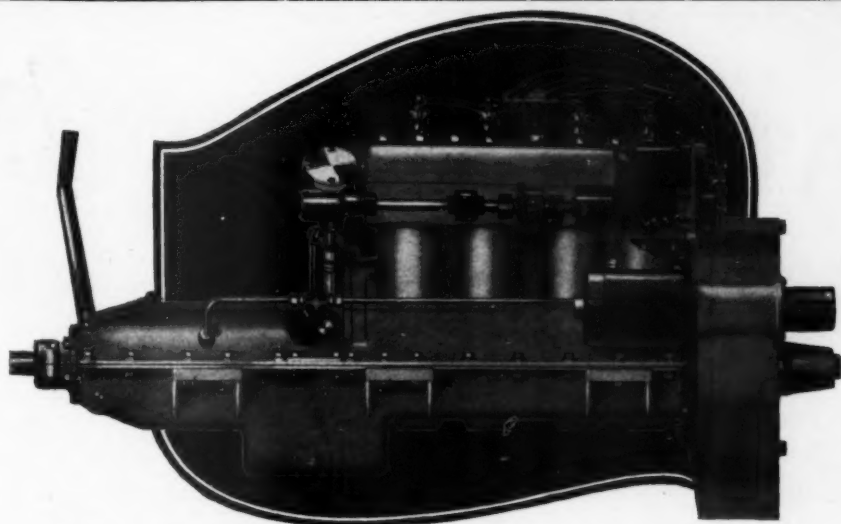
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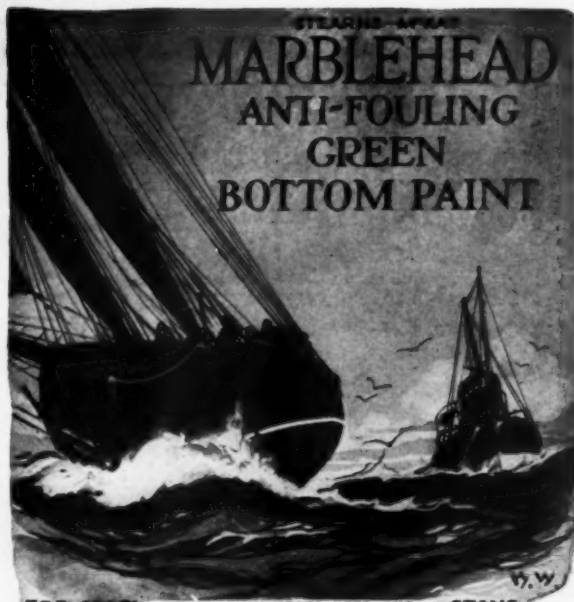
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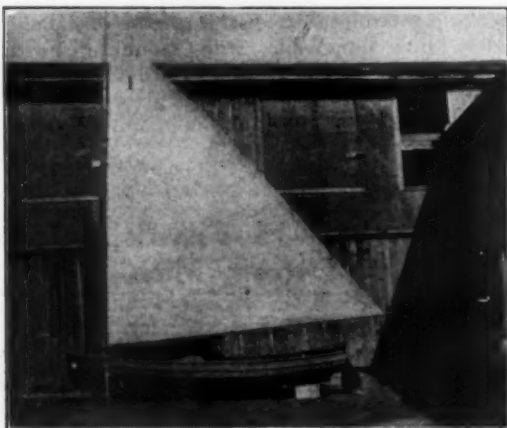
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The Duplicity of Captain Scraggs

(Continued from page 108)

"Well?" his navigating officer queried.

"Couldn't find him," Scraggs confessed. "Scab Johnny says he loaned Mac a dry outfit an' the old boy dug out for breakfast at seven o'clock an' ain't been around since."

"Did you try the saloons, Scraggs?"

"I did. Likewise the cigar stands an' restaurants, an' the readin' rooms of the Marine Engineers' Association."

"Guess he's out hustlin' a job," Mr. Gibney sighed. He was filled with vague forebodings of evil. "If you'd only listened to my advice last night, Scraggs—if you'd only listened," he mourned.

"We'll cross our bridges when we come to them, Gib. Cheer up, my boy, cheer up. I got a new engineer. He won't last, but he'll last long enough for Mac to forget his grouch an' listen to reason," and with this optimistic remark Captain Scraggs dropped into the engine room to get up enough steam to keep the winch working.

Promptly at twelve o'clock the longshoremen knocked off work for the lunch hour and Neils Halvorsen drifted across the street to cool his parched throat with steam beer. While waiting for Scraggs to come up out of the engine room, and take him to luncheon, Mr. Gibney sauntered aft and was standing gazing reflectively upon a spot on the Maggie's stern where the hawsers had chafed away the paint, when suddenly his forebodings of evil returned to him a thousand fold stronger than they had been since Scraggs's return to the little ship. He glanced up and beheld gazing down upon him Captains Jack Flaherty and Daniel Hicks. Battle was imminent and the valiant Gibney knew it; wherefore he determined instantly to meet it like a man.

"Howdy, men," he saluted them. "Glad to have you aboard the yacht," and he stepped backward to give himself fighting room.

"Here's where we collect the towage bill on the S. S. Yankee Prince," Dan Hicks informed him, and leaped from the bulkhead straight down at Mr. Gibney. Jack Flaherty followed. Mr. Gibney welcomed Captain Hicks with a terrific right swing, which missed; before he could guard, Dan Hicks had planted left and right where they would do the most good, and Mr. Gibney went into a clinch to save himself further punishment.

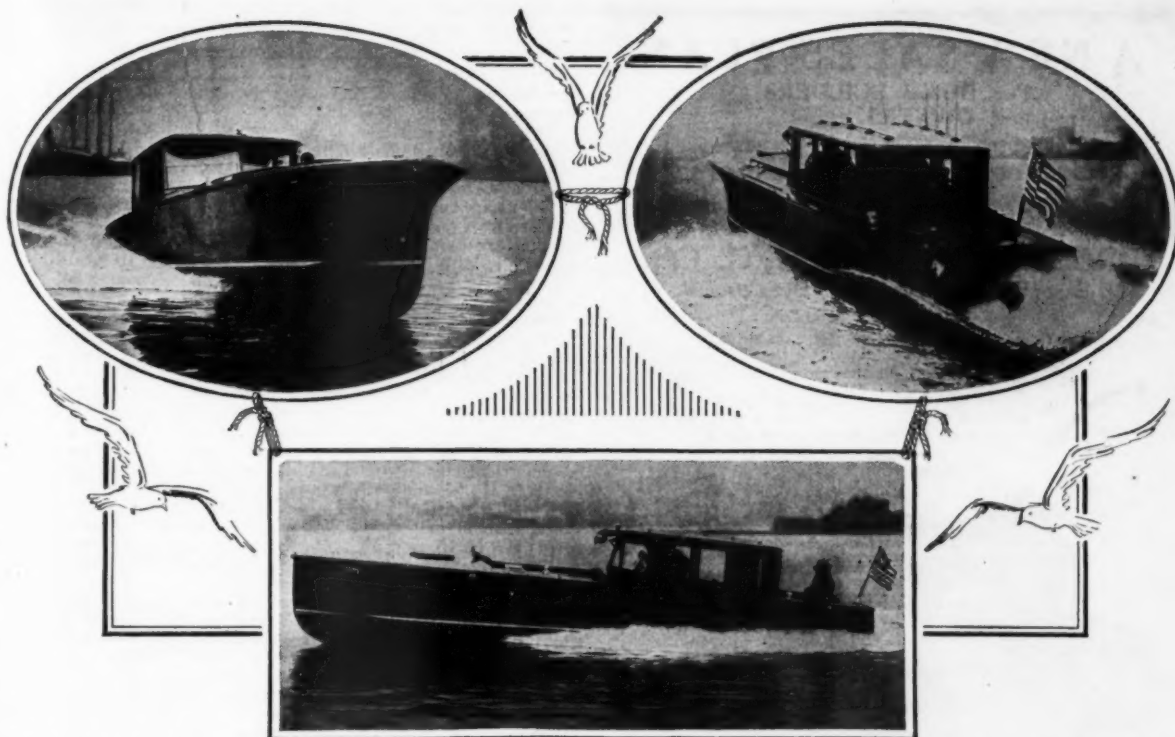
"Scraggs," he bawled, "Scraggs-y-y! Help! Murder! It's Hicks and Flaherty! Bring an ax!"

He flung Dan Hicks at Jack Flaherty; as they collided he rushed in and dealt each of them a powerful poke. However, Messrs. Hicks and Flaherty were sizeable persons, and, while individually they were no match for the tremendous Gibney, nevertheless what they lacked in horsepower they made up in pugnacity—and the salt sea seldom breeds a cream. Captain Scraggs thrust a frightened face up through the engine room hatch, but at sight of the battle royal taking place on the deck aft, his blood turned to water and he thought only of escape. To climb up to the bulkhead without being seen was impossible, however, so, not knowing what else to do, he stood on the iron ladder and gazed, pop-eyed with horror, at the unequal contest.

Backward and forward the tide of battle surged. For nearly three minutes all Scraggs saw was an indistinct tangle of legs and arms; then suddenly the combatants disengaged themselves and Scraggs beheld Mr. Gibney lying prone upon the deck with a gory face upturned to the foggy skies. When he essayed to rise and continue the contest, Flaherty kicked him in the ribs and Hicks cursed them; so Mr. Gibney, realizing that all was over, beat the deck with his hand in token of surrender. Hicks and Flaherty waited until the fallen gladiator had recovered sufficient breath to sit up; then they pounced upon him, lifted him to the rail, and dropped him overboard. Captain Scraggs shrieked in protest at this added touch of barbarity, and Dan Hicks, turning, beheld Scraggs's white face at the hatch.

"You're next, Scraggs," he called cheerfully, and turned to peer over the rail. Mr. Gibney had emerged on the surface and was swimming slowly away toward an adjacent float where small boats landed. He climbed wearily up on the float and sat there, gazing across at Hicks and Flaherty without animus, for to his way of thinking he had gotten off lightly, considering the enormity of his offense. The least he had anticipated was three months in hospital, and so grateful was he to Hicks and Flaherty for their great forbearance that he strangled a resolve to "lay" for Hicks and Flaherty and thrash them individually—something he was fully able to do—and forgot his aches and pains in a lively interest as to the fate of Captain Scraggs at the hands of the towboat men. He was aware that Captain Scraggs had failed ignominiously to rally to the Gibney appeal to repel boarders, and in his own expressive

(Continued on page 116)

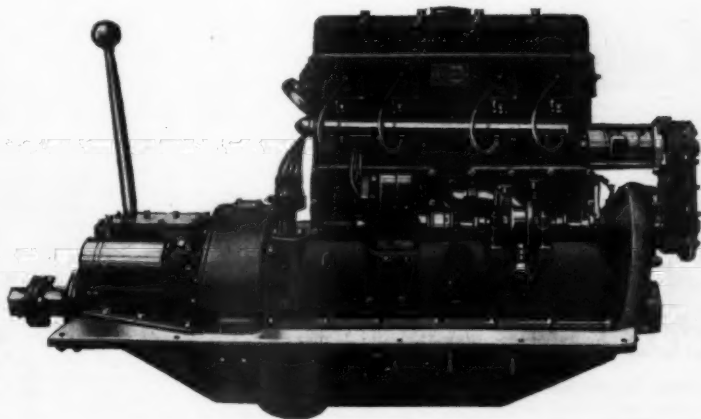


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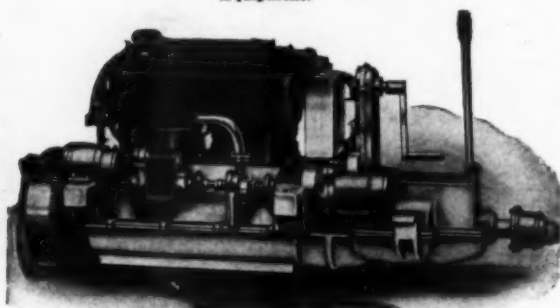
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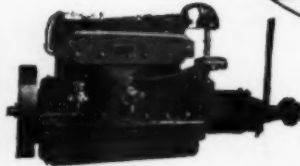
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The Duplicity of Captain Scraggs

(Continued from page 114)

terminology he hoped that what the enemy would do to the dastard would be "a-plenty."

The enemy, meanwhile, had turned their attention upon Scraggs, who had dodged below like a frightened rabbit and sought shelter in the shaft alley. He had sufficient presence of mind, as he dashed through the engine room, to snatch a large monkey wrench off the tool rack on the wall, and, kneeling just inside the alley entrance, he turned at bay and threatened the invaders with this weapon. Thereupon Hicks and Flaherty pelted him with lumps of coal, but the sole result of this assault was to force Scraggs further back into the shaft alley and out of range.

The towboat men held a council of war and decided to drown Scraggs out. Dan Hicks ran up on deck and returned dragging the deck fire hose behind him. He thrust the brass nozzle into the shaft alley entrance and invited Scraggs to surrender unconditionally or be drowned like a kitten. Scraggs, knowing his own fire hose, defied them, so Dan Hicks started the pump while Flaherty turned on the water. Instantly the hose burst up on deck and Scraggs's jeers of triumph filled the engine room. The enemy was about to draw lots to see which one of the two should crawl into the shaft alley and throw a cupful of chloride of lime (for they found a can of this in the engine room) in Captain Scraggs's face, when a shadow darkened the hatch and Mr. Bartholomew McGuffey demanded belligerently: "What's goin' on down there? Who the devil's takin' liberties in my engine room?"

Dan Hicks explained the situation and the just cause for drastic action which they held against the fugitive in the shaft alley. Mr. McGuffey considered a few moments and made his decision.

"If what you say is true—an' I ain't in position to dispute you, not havin' been present when you hauled the Maggie off the beach, I don't blame you for feeling sore. What I do blame you for, though, is carryin' the war aboard the Maggie. If you wanted to whale Gib an' Scraggsy you should ha' laid for 'em on the dock. Under the circumstances, you make this a pers'nal affair, an' as a member o' the crew o' the Maggie I got to take a hand an' defend my skipper agin youse two. Fact is, gentlemen, I got a date to lick him first for what he done to me last night. Howsumever, that's a private grouch. The fact remains that you two jumped my pal Bert Gibney an' licked him somethin' scandalous. Hicks, I'll take you on first. Come up, out of there, you swab, and fight. Flaherty, you stay below until I send for you; if you try to climb up an' horn in on my fight with Hicks, Gibney'll brain you."

A faint cheer came from the shaft alley. "Good old Mac. At-a-boy!"

"You're on, McGuffey. Nobody ever had to beg me to fight him," Dan Hicks replied cordially, and climbed to the deck. To his great surprise, Mr. McGuffey winked at him and drew him off to the stern of the Maggie.

"There'll be no fight," he declared, "although we'll thud around on deck an' yell a couple o' times to make Scraggs think we're goin' to it. He figgers that by the time I've fought you an' Flaherty I won't be fit for combat with him, even if I lick you both; he's got it all figgered out that I'll wait a couple o' days before tacklin' him, an' he thinks my temper'll cool by that time an' he can argy me out o' my revenge. Savey?"

"I twig."

Mr. Gibney had returned to the Maggie by this time and he now took his station at the engine-room hatch and growled at Flaherty and abused him. "Keep up your courage, Scraggsy," he called, as Hicks and McGuffey pranced around the deck in simulated combat. "Mac's whalin' the whey out o' Hicks an' Hicks couldn't touch him with a buggy whip."

At the conclusion of the three minutes of horse-play, Mr. McGuffey came to the hatch again. "Up with you Flaherty," he called loud enough for Captain Scraggs to hear, "up with you before I go down after you."

Flaherty was about to possess himself of a hatchet when the face of his confrère, Dan Hicks, appeared over McGuffey's shoulder and grinned knowingly at him. Immediately, Flaherty hurled defiance at his enemies and came up on deck, and once more to Captain Scraggs came the dull sounds of apparent conflict overhead.

Suddenly a cheer broke from Mr. Gibney. "All off an' gone to Coopertown, Scraggsy," he shouted. "Come up an' take a look at the fallen."

Out of the shaft alley came Scraggs with a rush, tossing his wrench aside the better to climb the ladder. He was half way up when Mr. Gibney reached down a great hand, grasped him by the collar, and whisked him out on deck with a single jerk. Here, to his horror, he found himself confronted by a singularly scathless trio who grinned triumphantly at him.

(Continued on page 120)

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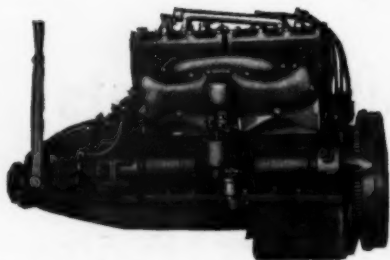
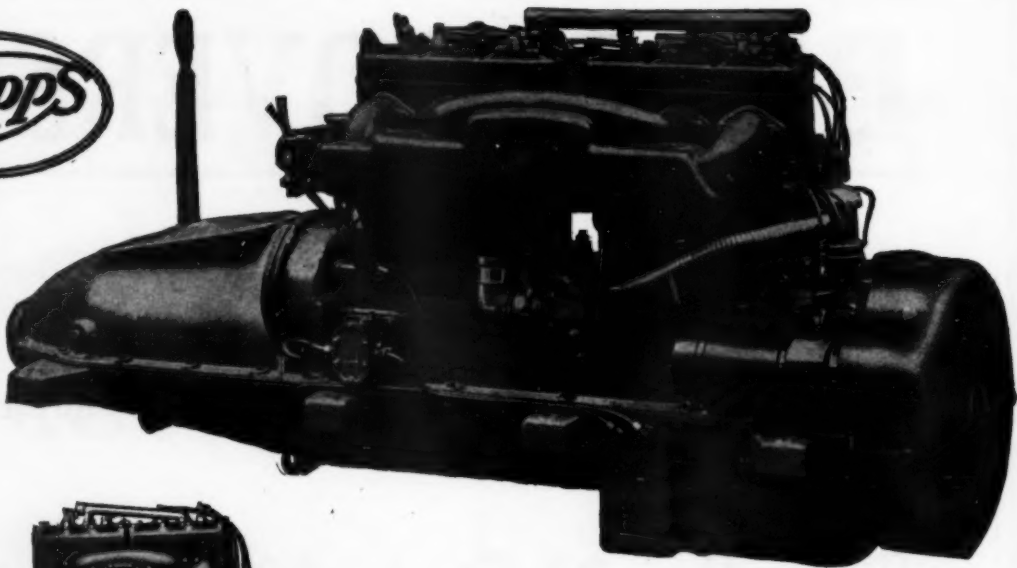
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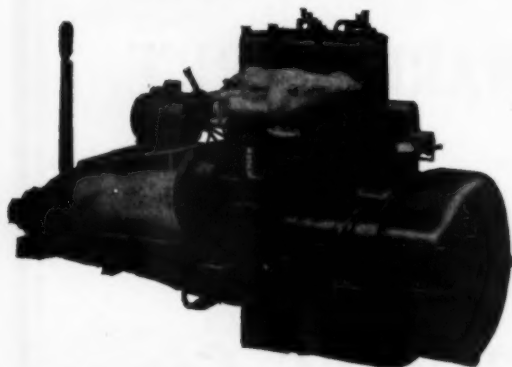


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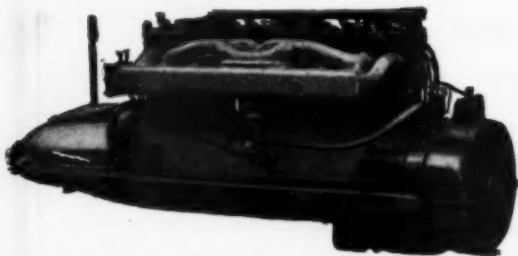
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The Duplicity of Captain Scraggs

(Continued from page 116)

"Seein' is believin', Scraggs," Dan Hicks informed him. "That's a lesson you taught me an' Flaherty last night, but evidently you don't profit by experience. You're too miserable to beat up, but just to show you it ain't possible for a dirty bay pirate like you to skin the likes o' me an' Flaherty we purpose hangin' the seat o' your pants up around your coat collar. Face him about, Gibney."

Jack Flaherty raised his voice in song:
Glorious! Glorious!

One kick a piece for the four of us!

With a quick twist, Mr. Gibney presented Captain Scraggs for his penance; Flaherty and McGuffey followed Dan Hicks promptly and Captain Scraggs screamed at every kick. And now came Mr. Gibney's turn. "For failin' to stand up like a man, Scraggs, an' battle Hicks an' Flaherty," he informed the culprit, and tossed him over to McGuffey to be held in position for him.

"Don't, Gib. Please don't," Scraggs wailed. "It ain't comin' to me from you. I never heard you callin' a-tall. Honest. I never Gib. Have mercy, Adelbert. You saved the Maggie last night an' a quarter interest in her is yours—if you don't kick me!"

Mr. Gibney paused, foot in mid-air; surveyed the Maggie from stem to stern, hesitated, licked his lower lip, and glanced at the common enemy. For an instant it came into his mind to call upon the valiant and able McGuffey to support him in a fierce counter attack upon Hicks and Flaherty. Only for an instant, however; then his sense of fair play conquered.

"No, Scraggs," he replied sadly. "She ain't worth it, an' your duplicity can't be overlooked. If there's anything I hate it's duplicity. Here goes, Scraggs—and get yourself a new navigatin' officer."

Scraggs twisted and flinched instantly, and Mr. Gibney's great boot missed the mark. "Ah," he breathed, "I'll give you an extra for that."

"Don't! Please don't," Scraggs howled. "Lay off'n me an' I'll put in a new boiler an' have the compass adjusted."

The words were no sooner out of his mouth than Mr. McGuffey swung him clear of Mr. Gibney's wrath. "Swear it," he hissed. "Raise your right hand an' swear it—an' I'll protect you from Gib."

Captain Scraggs raised a trembling right hand and swore it. "I'll get a new fire hose an' fire buckets; I'll fix the ash hoist and run the bedbugs an' cockroaches out of her," he added.

"You hear that, Gib?" McGuffey pleaded. "Have a heart." "Not unless he gives her a coat of paint an' quits bickerin' about the overtime, Bart."

"I promise," Scraggs answered him. "Pervided," he added, "you an' dear ol' Mac promises to stick by the ship."

"It's a whack," yelled McGuffey joyfully, and whirling, struck Dan Hicks a mighty blow on the jaw. "Off our ship, you hoodlums." He favored Jack Flaherty with a hearty thump and swung again on Dan Hicks. "At 'em, Scraggs. Here's where you prove to Gib whether you're a man—thump—or a mouse—thump—or a—thump, thump—bobtailed—thump—rat."

Dan Hicks had been upset, and as he sprawled on his back on deck, he appeared to Captain Scraggs to offer at least an even chance for victory. So Scraggs, mustering his courage, flew at poor Hicks tooth and toenail. His best was not much but it served to keep Dan Hicks off McGuffey while the latter was disposing of Jack Flaherty, which he did, via the rail, even as the towboat men had disposed of Mr. Gibney. Dan Hicks followed Flaherty, and the crew of the Maggie crowded the rail as the enemy swam to the float, crawled up on it and departed, vowing vengeance.

"All's well that ends well, gentlemen," Mr. McGuffey announced. "Scraggs's goin' to buy a drink an' the past is buried an' forgotten. Didn't old Scraggs put up a fight, Gib?"

"No, but he tried to, Mac. I'll tell the world he did," and he thrust out the hand of forgiveness to Scraggs, who, realizing he had come very handsomely out of an unlovely situation, clasped the hands of Mr. Gibney and McGuffey and burst into tears. While Mr. McGuffey thumped him between the shoulder blades and cursed him affectionately, Mr. Gibney retired to change into dry garments; when he reappeared the trio went ashore for the promised grog and a luncheon at the skipper's expense.

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